

Railway Age

DAILY EDITION

FIRST HALF OF 1919—No. 24b

NEW YORK—THURSDAY, JUNE 19, 1919—ATLANTIC CITY

SIXTY-FOURTH YEAR

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MINER **BALANCED SIDE BEARINGS**



SIMPLE, STRONG AND DURABLE
IN USE ON THOUSANDS OF CARS

PIER SPACE 584-585

W.H.MINER CHICAGO



WAR INDUSTRIES

of

McCord and Company

Aerial Bombs
Tank Links
Tank Wheels
Gun Carriage Frames
Tractor Castings
Journal Boxes








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Chicago
Montreal
New York

SPACE 629

A SUPERVISOR OF FUEL CONSERVATION SAID IN A PAPER ON LAME ENGINES AND THEIR EFFECT ON FUEL CONSUMPTION, BEFORE THE CONVENTION OF THE RAILWAY FUEL ASSOCIATION IN CHICAGO IN MAY:—

“With the slight change in valve adjustment shown between Tests 1 and 3, there was a difference of 18.33 per cent in fuel consumed; no other charge can be made of this loss of fuel than to the condition of the valves. The waste would undoubtedly increase with heavier service or more distorted valve condition.”

AND A MASTER MECHANIC WROTE US:—

“I find that our large passenger engines so equipped (with the Schlacks System of Locomotive Force Feed Lubrication) have less carbonization, which in turn, greatly reduces friction and insures long life to the valve motion. The valve vents on these engines remain perfect, which is conclusive evidence that the lubrication is not only properly distributed but delivered uniformly at all times.”

LOCOMOTIVE LUBRICATOR COMPANY

Booth No. 574, Atlantic City, N. J.

1202 Tower Bldg., Chicago, Illinois

Railway Age

DAILY EDITION

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ROY V. WRIGHT, *Secretary*.

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WE GUARANTEE that of this issue, 17,000 copies were printed; that of these 17,000 copies, 15,406 were mailed to regular paid subscribers to the Railway Age and the Railway Mechanical Engineer; 119 were mailed to advertisers, 300 were provided for counter and news companies' sales, new subscriptions, bound volumes, copies lost in the mail and office use; and 1,175 copies for distribution at Atlantic City.

THE RAILWAY AGE is a member of the Audit Bureau of Circulations (A. B. C.) and the Associated Business Papers. (A. B. P.)

The report of the Brake Shoe and Brake Beam Equipment Committee, which was presented during yesterday morning's session, was received without discussion, not because of any lack of interest in the subject, but because in a large measure the report is a forecast of what may be expected in the way of definite proposals for consideration next year. There is much in the report which is of great interest and will undoubtedly be carefully considered by the membership of the Mechanical Section. In general, the plan of procedure which the committee proposes to follow is to be highly commended. The five suggested steps in which subjects before the committee will be advanced to the point of consideration for advancement to the standards of the Section will offer ample opportunity for the formation of well digested and crystallized opinions on the part of the membership, so that better ballot action may be of a more intelligent nature than it has been some times in the past. One point mentioned in the report is worthy of especial attention. This is the effect of the change in the relative location of the center loop hanger opening of the brake head and the center line of the brake beam strut, raising the center of the hanger above the center of the strut. The result, under load, is an eccentrically loaded brake shoe, with a tendency for greater wear at the bottom than at the top. With the brakes released the brake heads will tend

to drag at the top, while hanging free at the bottom. The proposal that the standard and recommended practice sheets of the association show a method of laying out the brake head, rather than mere detailed dimensions of the finished heads, is an excellent one, as it should avoid all possible misunderstandings in the interpretation of the standard, whatever it may be in its finally adopted form. The suggestion of the committee that the judgment of a committee member may be of an opposite character in his official capacity from that exercised in the capacity of a representative member is open to question. If the members of a committee cannot support the recommendations to which they attach their signatures as committee members, when acting on the same propositions in the letter ballot, they have little right to expect the support of the association as a whole to the propositions which they propose that the association adopt for universal application.

Track exhibits this year are probably the most remarkable that have ever been seen at any convention during the history of the association. The exhibit of railroad equipment alone is unusually extensive and interesting, but in addition to the railroad equipment there are a number of heavy railroad mounts for the Army and Navy Ordnance that are not only noteworthy because of the natural interest attaching to equipment of this nature at the present time, but also because of the problems which had to be solved by the designers to provide for the extraordinary stresses to which equipment of this sort is subjected. It is of interest to note that in some cases this equipment differs very little from standard railroad practice. Two of the Army rifles, the seven-inch and the eight-inch, the mounts of which are of the well-car type, are carried on standard M. C. B. trucks, a 50-ton truck in one case and a 70-ton truck in the other. As a whole, this part of the exhibit is a remarkable demonstration of the adaptability of the manufacturers of railway equipment, who, in the time which has elapsed since the last convention in Atlantic City, have produced large quantities of ordnance and other munitions in addition to their regular products.

Track and Other Outside Exhibits

The *Railway Age* has referred in the past to the good work being done by the Latin-American Division of the Bureau of Foreign and Domestic Commerce in connection with its reports on railways and markets for railway supplies in various South American countries. It now desires also to express its appreciation of the work being done by another of the divisions of the bureau—namely, the Division of Statistics. That division for the past few months has been compiling detailed figures of exports of all kinds, classified by countries of destination, and has included the tabulation of export figures of railway supplies under the following heads: locomotives; cars; car wheels and axles, and railway track material. The figures in question have been reproduced in the foreign railway news column of the *Railway Age*, and, we believe, have served a real purpose, not only in stimulating interest in export trade, but in showing that this interest is proving a most practical one. The tabulation by countries of destination is especially valuable, as it enables the observer to see into what markets our trade is expanding and permits the drawing of

Statistics of Exports

definite conclusions therefrom. The figures as compiled by the division for the year thus far are as follows:

Month	Locomotives		Freight Cars		Car Wheels and Axles
	No.	Value	No.	Value	Value
January ...	87	\$3,076,543			\$278,393
February ..	85	2,584,269	583	\$957,128	541,630
March	27	852,224			686,281
April	55	2,193,168	1,005	1,913,728	946,304

The increase in the exports of car wheels and axles in the four months is especially encouraging, although the exports of cars and locomotives are not very large. It should be borne in mind, however, that they represent in reality the beginning of our peace time export trade, and will no doubt increase from month to month as conditions generally improve. It is to be hoped that the bureau will keep up this work and thereby supply an indication of the increase in exports of railway supplies that is rightly to be expected.

Depreciation of Freight Cars

THE PROLONGED and animated discussion of the report presented by the Committee on the Depreciation for Freight Cars shows that the members generally were greatly interested in the subject. The accurate determination of the average life of cars is extremely important because of the large amount of money involved in the settlement for destroyed cars. The committee is to be commended for its work in compiling statistics regarding the average life of wooden and steel equipment to be used as a basis for the rate to be applied under various conditions.

One point brought out very clearly in the course of the discussion was the impracticability of settling for cars on any but an average basis. The conflicting statistics regarding the life of steel cars shows the extent to which the type of construction, the weight of the car, the standard to which it is maintained and the service to which it is assigned affect the life and consequently the rate of depreciation. Obviously, the effect of these factors cannot be evaluated in fixing the settlement price and the average age at which the cars are dismantled furnishes the only satisfactory data on which to base the depreciation rate.

The limiting of depreciation to 50 per cent. of the value now probably strikes a bare average for all cars. Extensive studies have shown that the estimated service life based on the physical condition alone does not decrease more than 40 per cent. in actual service, but the older equipment, of course, must be retired, due to obsolescence, even though the individual parts of the car may be in good condition. If it were practical to make a separate classification for the older types of equipment, the maximum depreciation might be increased to an amount equal to 100 per cent. minus the scrap value.

Some road will, no doubt, question the advisability of applying the same rates of depreciation to the truck that are applied to the car body. Many roads make a practice of setting aside the trucks removed from cars which are dismantled and applying them under company service for less capacity equipment, such as stock cars. The long life of the truck and the high scrap value of the wheels and axles would seem to call for a rate of depreciation lower than that which is fixed for the car body.

The work of the committee during the past year furnishes an excellent foundation for the development of a thoroughly logical basis for settling for destroyed cars. The continuation of its investigation, particularly with regard to the life of steel cars and the establishment of a separate rate for rebuilt cars, promises to furnish data

that will eliminate many of the principal objections to the former rules covering this subject.

Government's Debts to Railway Supply Companies

NO OTHER PEOPLE IN THE COUNTRY will be so glad to see the \$750,000,000 railroad appropriation bill passed by Congress as the railway supply people. The experience of the railway supply people with Government operation has been, in the main, a distinctly unpleasant one. They were at first confronted with what was regarded as a demand that they should, in dealing with the railways under Government control, pool their patents and forego the royalties upon them. Next, an attempt was made to force them to sell to the Government on a lower basis of profit than any other class of concerns that was doing business with the Government. Later they were presented with a ruling of the Attorney-General of the United States to the effect that every concern selling any kind of goods to the Government railways must insert in the contract a warranty—later modified—that no commission was or would be paid to any agent for having got the business.

But perhaps the thing which, under Government control, has caused the supply people more trouble than anything else has been the delay of the Government in paying its bills. When the railroad appropriation bill was killed by a filibuster at the last session of Congress, the Railroad Administration owed the railway equipment and supply concerns many millions of dollars. The passage of that bill would have enabled the Administration to meet its obligations. Its defeat rendered it impossible for the Railroad Administration to pay its debts. In consequence, for months the Government has owed the railway equipment and supply companies vast sums of money. In order to continue to carry on their business, the supply companies have been obliged to borrow large sums from the banks, on which they have had to pay interest. They had to do this borrowing because the Government did not pay them what it owed them, but on a large part of its indebtedness to them the Government has not paid interest. In consequence, the companies have had to strain their credit at the banks and to incur losses by paying interest on money which they should have received from the Government instead of being obliged to borrow it.

It is not the fault of the Railroad Administration that its debts to the railway supply companies have not been promptly paid, but it is the fault of the Government. Congress is a branch of the Government, and it was its failure to pass the needed legislation which left the Railroad Administration without adequate funds. Congress is now engaged in partially repeating its former performance. Director General Hines asked it at the present session to appropriate \$1,200,000,000 for the Railroad Administration. He estimated that this amount would be required to carry the administration through to the end of the present year. Without any investigation, Congress has cut the appropriation to \$750,000,000. This amount, it is understood, will be sufficient only to enable the administration to meet its existing obligations, and, as soon as they are settled, it will have to begin to go into debt again.

The Government has always borne the reputation of being a bad customer to do business with. The railway supply concerns can bear testimony that in its dealings with them during the last year and a half it has fully lived up to its reputation.

Program For To-day

9.30 A. M. TO 1.30 P. M.

Discussion of Reports on:

Car Wheels	9.30 A. M. to 10.00 A. M.
Standard Blocking for Cradles of Car Dumping Machines.....	10.00 A. M. to 10.30 A. M.
Specifications and Tests for Materials (M. C. B.).....	10.30 A. M. to 11.30 A. M.
Welding Truck Side Frames, Bolsters and Arch Bars.....	11.00 A. M. to 11.30 A. M.
Couplers	11.30 A. M. to 12.00 M.
Draft Gear	12.00 M. to 12.30 P. M.
Questions proposed by Members....	12.30 P. M. to 1.30 P. M.

ENTERTAINMENT.

10.30 A. M.—Band Concert, Entrance Hall, Million Dollar Pier. Royal Scotch Highlanders' Band.

3.30 P. M.—Orchestral Concert and Impromptu Dancing. Entrance Hall, Million Dollar Pier. Fry Philharmonic Orchestra. Tea will be served at 4.30 P. M. in Entrance Hall.

9.30 P. M.—Carnival Night. Special Features. Ball Room, Million Dollar Pier. Royal Scotch Highlanders' Band.

Cornell Dinner

THE REGULAR ANNUAL dinner for Cornell men will be held on Friday evening, June 20, at the Traymore. All Cornellians are requested to register with L. H. Lynder at the booth of the Joseph Dixon Crucible Co., Space 24 in the Main Building, before Friday noon.

Railway Club Secretaries Meet

THE ANNUAL MEETING of the Society of Railway Club Secretaries is scheduled for 10 o'clock this morning in Room 192 of the Blenheim. Several questions of unusual concern to the railway clubs are to be taken up. The business session will be followed by a "round table" luncheon for the secretaries and their guests.

Chicago Pneumatic Installs Railroad Department

THE CHICAGO PNEUMATIC TOOL COMPANY announced yesterday the appointment of L. C. Sprague as manager of the railroad department and C. W. Cross as assistant manager. These appointments are effective July 1. Mr. Sprague is at present district manager at New York and Mr. Cross has been acting as special railroad representative at Chicago.

Pennsylvania Directors Visit Track Exhibit

THE BOARD OF DIRECTORS of the Pennsylvania Railroad, holding a meeting in Philadelphia yesterday, adjourned the meeting, and, accompanied by President Rea, came to Atlantic City, arriving at three o'clock in the afternoon for a visit of inspection of the Pennsylvania equipment on exhibition at the conventions this year. This includes the most powerful electric locomotive in the world, a new simple Mallet type locomotive and the road's class 11s Decapod. They also visited the

cars on Georgia Avenue. They returned to Philadelphia at five o'clock.

Vice-President Parish Resigns

LE GRAND PARISH, who was elected vice-president of the Railway Supply Manufacturers' Association at the 1916 convention, has asked to be relieved from his position because of the pressure of other duties. Mr. Parish was looked upon as the logical candidate to succeed President Walker. His action means that it will be necessary to look elsewhere for the new president.

Executive Committee, A. R. A.

THE MEETING of the Executive Committee of the American Railroad Association, reference to which was made in yesterday's daily, is scheduled to be held at the Marlborough-Blenheim at 11 o'clock this morning. It is expected that the work of the meeting will be finished early in the afternoon, and that the members of the committee will later pay a visit to the exhibit.

Canadian National Railways in Market for Passenger Cars

THE TORONTO GLOBE of June 14 contains the following item: "Tenders on twenty mail cars and twenty first-class coaches are being asked for by the Canadian National Railways. If the order is placed it will constitute the largest rolling stock order placed by any railway since the outbreak of hostilities. At an estimated cost of \$20,000 per car the order is worth \$800,000."

The Informal Dance Last Evening

THE INFORMAL RECEPTION and dance on the Million Dollar Steel Pier last night marked the formal commencement of the week's entertainment features. From 8 until 9 o'clock a band concert and reception were greatly enjoyed. The dance program was then commenced. This consisted of the fox trot, one step and the now called old-fashioned waltz. The Royal Scotch Highlanders' Band furnished the music. At 11 o'clock the pier orchestra succeeded the "Kilties" and played until midnight.

The evening's affair was well handled by the following gentlemen: L. B. Sherman, chairman; W. M. Wilson, N. C. Naylor, G. A. Nichol and W. M. Melcher.

Meeting of Railway Car Manufacturers' Association

DR. W. F. M. Goss, president, and C. S. Sale, assistant to the president of the Railway Car Manufacturers' Association, are here, and will attend a meeting of the Association, which is to be held at the Marlborough-Blenheim at 1.30 P. M. to-day. The Association, as its name implies, is composed of the manufacturers of railway cars. It was organized in February, 1917, primarily to do research and other similar work in connection with the construction of the 100,000 standard freight cars ordered by the Railroad Administrator last year. About 48,000 of the cars have now been built, and

it is expected that all of them will be finished in September.

Dr. Goss was formerly dean of the Engineering College of the University of Illinois, and Mr. Sale was formerly in charge of the engineering experiment station of the same university. Some years ago Mr. Sale was an associate editor of the *Railway Age*.

Delivery of Standard Equipment

THE RAILROAD ADMINISTRATION has compiled the following statement showing the delivery of its standard freight cars and locomotives to May 28:

Type	LOCOMOTIVES.		Total Tractive Power Pounds	Number Delivered May 28
	Average Tractive Power Pounds	Number Contracted for		
Light Mikado	54,600	655	35,763,000	533
Heavy Mikado	60,000	233	13,980,000	98
Light mountain	53,900	40	2,156,000	32
Heavy mountain	58,000	15	870,000	13
Light Pacific	40,700	43	1,750,000	23
Heavy Pacific	43,800	20	876,000	10
Light Santa Fe	69,400	94	6,524,000	75
Heavy Santa Fe	74,000	175	12,950,000	117
Light mallet	80,300	30	2,409,000	15
Heavy mallet	106,000	106	11,236,000	25
6-wheel switch	39,100	255	9,971,000	226
8-wheel switch	51,200	145	7,424,000	90
Reading consolidated	50,000	30	1,500,000	...
Undetermined types .....	...	89	4,922,000	...
Total	58,200	1,930	112,331,000	1,257
Estimated date when deliveries will be completed, December 1, 1919.				

FREIGHT-TRAIN CARS.				
Type	Number	Total Capacity <i>Pounds</i>	Number Delivered May 28	
50-ton single-sheathed box	25,000	1,250,000	8,669	
40-ton double-sheathed box	25,000	1,000,000	10,386	
50-ton gondola	20,000	1,000,000	14,243	
55-ton hopper	25,000	1,375,000	18,330	
70 ton gondola	5,000	350,000	1,326	
Total	100,000	4,975,000	52,954	
Estimated date when deliveries of cars will be completed, October 1, 1919.				

Supplementary List of Exhibitors

THE FOLLOWING is in addition to the list of exhibitors published in the *Daily Railway Age* of June 18th, page 1479:

- Acar Manufacturing Company, New York, N. Y.—Acar signal device—blue flag. Represented by Chas. R. Powell. Space 376.
- Baldwin Locomotive Works, Philadelphia, Pa.—Gun mount on Pennsylvania track, off Boardwalk, four blocks from pier, with 14-inch naval rifle. Gun is 50-calibre, 65 feet long; weight of mount is 650,000 pounds; total length of mount, 110 feet. One caterpillar tractor mount, with 7-inch gun. Represented by Samuel M. Vauclain, C. A. Bourgeois, W. H. Leary, Lieut. A. H. Showalter, U. S. N.; John H. Kindle, U. S. N.; G. Greenough, A. H. Ehle, A. W. Hinger and Chas. W. Werst. Space P. R. R. track, west of pier, on Boardwalk.
- Cleveland Tractor Company, Cleveland, Ohio.—Industrial "Cletrac." "Crawler" tractor for heavy hauling over rough or soft footing. Represented by Walter A. Hall. Space on unloading platform on Boardwalk, opposite pier.
- Dale-Brewster Machine Company, New York, N. Y.—Western heavy duty, radial drill. Represented by Jas. J. Dale. Space 222.
- Davison Tool Manufacturing Corporation, New York, N. Y.—High-speed tool steel cast to form. Represented by Oscar F. Ostby. Space 205.
- Mercury Manufacturing Company, Chicago, Ill.—Industrial tractors—3 and 4-wheel machines. Represented by L. R. Duffield, J. S. Kunkle, C. H. Clair and K. A. Wood. Space on unloading platform, on Boardwalk opposite pier.
- Richardson Scale Company, Passaic, N. J.—Model of a car unloading device for emptying grain out of box cars and showing operation with grain. Represented by Henry Richardson. Space 38.
- Four Wheel Drive Auto Company, The, Clintonville, Wis.—U. S. Army standard ordnance truck, driven on all wheels. Truck in operation. Represented by R. M. Newbold. Space on track at Mississippi Avenue.

Special Programs for Saturday and Monday Evenings

PRESIDENT WALKER, of the Railway Supply Manufacturers' Association, made an announcement at the convention yesterday morning, in behalf of the Committee on Arrangements, concerning two special meetings that are to be held on Saturday evening of this week and Monday evening of next week. On Saturday evening there will be a meeting in the Ballroom on the pier in appreciation of the services of the railroad men and railway supply men who have participated in war activities.

Secretary of Navy Daniels will speak on behalf of the Administration for both the War and Navy Departments. Colonel Henry W. Hodge, who was assistant chief engineer of the American Expeditionary Forces in France, will speak of the work of the railroad men. General W. W. Atterbury has been invited to be present and has not said "No." He wants to come and is trying to make his arrangements accordingly.

On Monday evening Major E. D. Campbell, of the Railway and Seacoast Section, Artillery Division, Ordnance Department, United States Navy, will make an address on heavy artillery. The address will be illustrated by moving pictures and will be given in the Hippodrome. Major Campbell has been detailed to make this address by the War Department. Following the address a representative of the Navy Department will show pictures illustrating the effects of the 14-in. guns.

President Walker also called attention to the fact that some of the large guns are on exhibition on the track on Georgia Avenue and ten cars of light and heavy army artillery are on Mississippi Avenue.

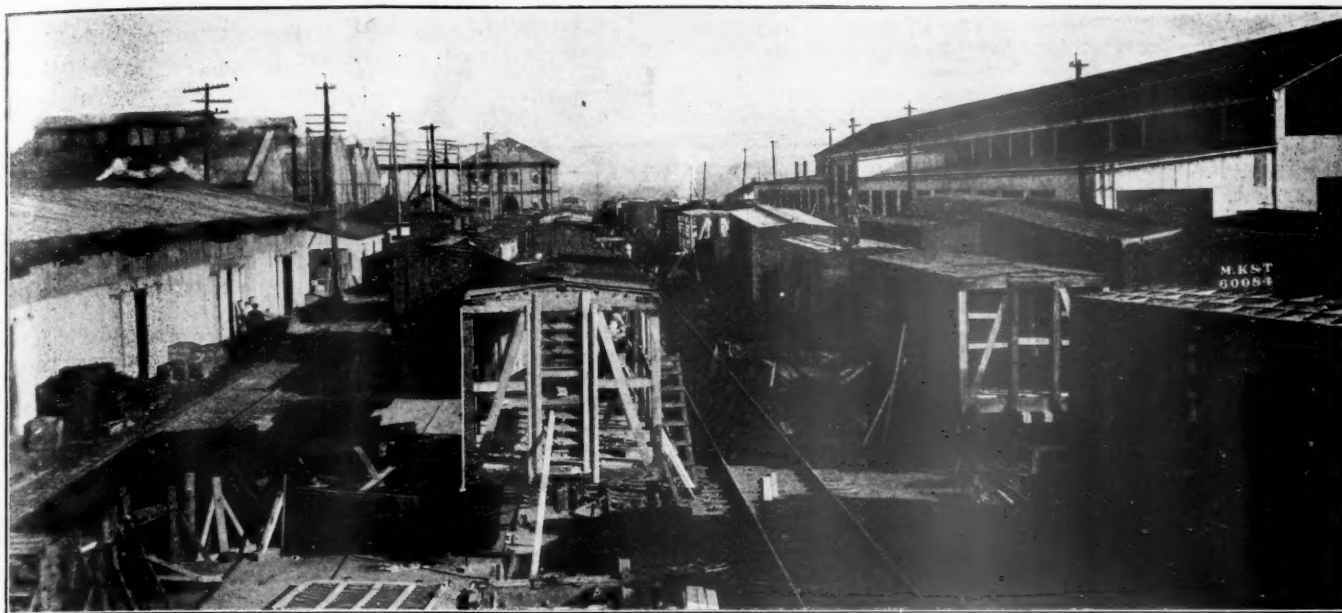
Baldwin Locomotive Works Exhibits Improved Mounts for Heavy Guns

THROUGH AN OVERSIGHT the exhibit of the Baldwin Locomotive Works was not included in the list of exhibitors published in yesterday's issue. Two interesting gun mounts—a 7-inch caterpillar mount and a 14-inch railway mount—built for the United States Navy at the Eddystone plant, are among the track exhibits on Georgia Avenue.

The caterpillar mount is one of a number of this type which have been built for use on rough roads and soft soil. The actual bearing pressure under the treads is approximately 10 pounds per square inch. The mounts are transported in the field by means of tractors of 120-hp.

The railway mount represents an improvement over those built during the war which did such effective service abroad. When firing at high angles with these first mounts it was necessary to jack up the gun and transfer its weight to a specially designed foundation in order to absorb the shock and to provide room for the recoil. The mount now on exhibition, however, is so designed that the gun can be fired at angles up to 43 degrees without relieving the trucks of its weight. The trucks are four in number, each having five pairs of wheels, making a total of 40 wheels under the mount. The average load carried on each pair of wheels is approximately 15 tons.

This exhibit is shown through the courtesy of the Ordnance Department of the United States Navy and the Pennsylvania Railroad, and is in charge of naval officers and enlisted men, together with several Baldwin representatives. It is open for inspection, to all holders of official badges and official admission cards, between the hours of 10.00 A. M. and 4.00 P. M.



American Railway Association, Section III, Mechanical

First Session Included Address by Chairman Chambers and Presentation of Several Reports

THE OPENING SESSION of the first annual convention of the American Railroad Association, Section III, Mechanical, was held in the Greek Temple on Young's Million Dollar Pier, Atlantic City, Wednesday, June 17, 1919.

The chairman, C. E. Chambers, mechanical assistant, Allegheny region, United States Railroad Administration, called the meeting to order at 9.50 o'clock. The Reverend Newton W. Cadwell, pastor of the Olivet Presbyterian Church, invoked the Divine Blessing.

The convention was welcomed to the city by Mayor Bacharach.

Address of the Mayor

I am not sure that you will agree with me that it is a mere matter of form for me to be here this morning to welcome you to this great playground of America, this great convention city of America, because you must surely realize that men and women who have been doing so much, not only during the period of war, but previous to the war—and I am sure that after you are out of government control you will do as much for the government in the future as you have in the past—you must surely realize that you are welcome, not only in Atlantic City, but in any city of this great country of ours.

We are glad to have you here, not alone because of the fact that you represent the wonderful and great industry that you do, not alone because of the fact that you have such a wonderful convention in our city—I understand one of the largest exhibits since the World's Fair—and not alone because you have such a large representation—we are pleased and proud and glad to have you here, for all of these reasons—but above all we are glad to have you here because we know that you represent true Americanism.

We, in our city, are proud of many things—we are proud of our magnificent boardwalk, 5 miles long, 100 feet wide, where a quarter of a million of people promenade at one time. We are proud of our magnificent streets, cleaner and better lighted we believe, than any other city in the country. Proud of the magnificent force of men who patrol our beach, and protect the lives of our five million bathers in a season. We are proud of our magnificent hotels, of our business establishments, but above all, in this city of ours, where there is no manufacturing industry, no munition plants, we are proud that there has never

been a drive for any patriotic purpose, or any purpose whatever, but what Atlantic City always has gone "over the top," and, in addition, my friends, over 3,500 of our best young manhood went forth to fight for your country and my country.

We did not wait for Congress to act, but from the day that the first soldier and sailor left this city, we took care of their dependents. We organized what we called the Liberty Club, in which the chair pusher on the boardwalk, the proprietor of a magnificent hotel, the street cleaner, the banker, were all members, and from the day that the first boy left our city to fight for this country, we took care of his dependents, not in a mean or miserly manner, but in a manner befitting the dependents of sailors and soldiers of the American Army and Navy. These boys are now returning, and as they left here with an easy conscience, we can meet them with an easy conscience.

There is one thing we have long been proud of—we have the finest and purest water in the country, and after July 1st we feel that the people will appreciate what fine water we have in Atlantic City.

In this city of ours we permit no flags except the Nation's flag, which represents something to be paraded on our streets, nor do we permit meetings of any sort unless they represent 100 per cent Americanism.

So we are pleased to have you here because we know that you represent true Americanism. You and I may not agree upon the question as to whether the government should or should not retain control of the railroads—I, for one, believe that the railroads should go back to the people that own them and who know how to properly run them. Now that the war is over, I feel that the practical men who have always been at the head of the railroads know more about running the railroads than the people at Washington know about running them.

I trust that your stay in our city will be a beneficial one, not alone to yourself and the members of your organization as individuals, not alone to you as an organization, not alone to the great industry which you represent, but to our country as a whole, and so, in behalf of the people of Atlantic City, I extend to you, and through you to all those who are in attendance at these conventions, a most cordial and hearty welcome to this great city of ours. I want to assure you that if the ladies present do not too seriously object, that to-night at least curfew

shall not ring. In behalf of the citizens of the city I present to you not only the key to our city, but the key to the hearts of the people of Atlantic City.

In behalf of the Association, Chairman Chambers thanked the Mayor for the kind welcome and then delivered his opening address.

Address of Chairman, C. E. Chambers

TO BE SELECTED as the presiding officer of so great an association is one of the highest honors that can come to a man in the mechanical profession, and as such, I extend to you a most hearty welcome to this first annual meeting of Section III—Mechanical, of the American Railroad Association, and what would have been under the old organization, the fifty-third annual convention of the Master Car Builders Association.

The unusually large attendance to-day indicates that we have not lost interest from the fact that the regular annual conventions were postponed in the years 1917 and 1918. Since our coming together in this city in June 1916, the great war in Europe, which at that time clouded our future, assumed greater strength, until on April 6th, 1917, we found ourselves forced into the World's greatest war, which was only terminated November 11th, 1918, after a loss of many of our brave boys, and resulting in almost complete disarrangement of our American commerce. Now that peace seems assured, let us trust and pray that none present to-day may live to see a re-occurrence of such a disgraceful and uncalled for waste of human life, and the world's necessities.

As the last President of the Master Car Builders' Association, I feel mindful that I should say something as to the organization and activities of that association.

The Master Car Builders' Association, in its beginning a voluntary organization, composed of Master Car Builders and foremen of railway car shops, was formally organized at Springfield, Massachusetts, Wednesday, May 15th, 1867, and held its first annual convention at Altoona, Pa., September 18th, 1867, at which time the date of the subsequent annual conventions was set for the second Wednesday of June each year. The subjects to be considered assumed proportions requiring more than one day's session, and later certain designated days in the month of June were selected for the annual conventions, which have obtained from that time up to the present date, with very few exceptions. At the meeting referred to, 41 master car builders were present, when a constitution and by-laws were adopted. Previous to this, and dating back as far as 1864, several informal meetings were held as follows:

The objects of the association were the advancement of knowledge concerning the construction, maintenance and service of railroad cars and parts thereof, by investigations through committees and discussions in convention; to provide an organization through which the members and the companies they represent, might agree upon such joint action as might be required to bring about uniformity and interchangeability in the parts of railroad cars, to improve their construction and to adjust the mutual interest growing out of their interchange and repair, but the action of the association was only of a recommendatory character, and was not binding upon any of its members, or the companies represented in it.

Formation and Development of the M. C. B. Association

The reasons for the formation of such an organization may be stated as follows: Prior to the date of the organization, cars were confined almost, if not entirely, to the roads for which they were built and to which they belonged. The inconvenience of trans-shipping freight when carried long distances soon made it necessary to run cars over more roads than one, and as the demand for carrying freight further without breaking bulk increased, some improvement was necessary in order to carry it without unloading and as rapidly as possible. This brought into existence different express or fast freight lines which operated over two or more roads in different sections of the country. It was soon found that difficulties were constantly occurring in regard to the repairs of these cars, and that they were often delayed when far away from home by not having the right kind of materials on hand to replace broken parts. Some plan

had to be devised to obviate the evil, and as the Master Car Builder was deeply interested in the physical condition of the car, an organization of these men was effected to take care of the prompt repairs.

Up to the year 1882, the organization was wholly voluntary. It received no financial support whatever from the railroad companies which were the owners of the property intrusted to the care of the Master Car Builders, and the improvement of which was the chief subject of consideration and discussion at their meetings, the expenses of the organization being met by assessment on the individual members. Neither were the railroads directly represented in the association, excepting by such exertions in behalf of their employes as the Master Car Builder might choose to make, if he were a member. It was, therefore, thought that if the association was so organized that each railroad company could be represented by a vote in its deliberations proportionate to its interests, or in other words, to the number of cars it owned, and if the work which the association had done and should do was adequately explained and understood by the chief executive officers of the railroads of the country, that they would be inclined to co-operate with the association and assist in its work. An amendment was therefore introduced at the convention in June, 1881, the purpose of which was to create a new class of members, to be called "Representative Members" with the status and privileges indicated above and described in amendments to the constitution of the Master Car Builders' Association.

The proposed plan of reorganization of the association was submitted to the chief executive officers of the railroads of this country, Canada and Mexico, and received practically unanimous approval. At an adjourned meeting held at Niagara Falls, New York, on October 10, 11 and 12, 1882, the proposed reorganization was ratified and adopted.

The number of cars represented in the association is practically 3,000,000, the cars of Canadian and Mexican railways being included in the above enumeration. Its membership extends to England, France, Russia, India, Australia, Japan, China, Argentina, Chili, Brazil, Cuba and the Philippines, officials of railroads in those countries wishing to avail themselves of the information contained in its proceedings relating to the construction and operation of cars.

As a result of the reorganization in 1882, the scope of the work of the association developed and broadened very materially. Through the financial support furnished by the railroad companies, investigations and tests of practically every part of a car have been, and are constantly being carried on, to furnish equipment of the necessary strength and designs to meet the varying requirements of the traffic of the country.

Standardization of Car Parts

The question of uniformity in the construction of cars whereby the parts of cars used by one railroad may be used in repairs of the cars of another road has been constantly before the association. As an indication of what has been accomplished in this direction, the following comparison of some of standard parts necessary to keep on hand for repairs at the date of reorganization (1882) and the present time is cited:

	1882	1918
Axles	56	5
Journal boxes	58	5
Couplers	26	2
Brake shoes	20	1
Brake heads	27	1

The parts enumerated above are only a few of those used in the repairs of cars, but if all were named, it would increase the list to enormous proportions. A condition similar to that indicated above exists wherever any considerable number of cars are interchanged between railroads.

Among the more important developments made by the asso-

ciation, may be mentioned the adoption in 1887 of the automatic coupler for cars, thus doing away with the link and pin coupler and the necessity for going between cars to couple them together. It may be said at the present time, it is the universal standard of all the steam railroads in the country. Another noted achievement was the adoption in 1888 of the automatic air brake as the standard of the association. To-day, every car in the country is equipped with this device. Following its adoption, a code of instructions for the proper operation of the air

ing car owners for the destruction or damage to their cars by other handling companies. (6) The compulsory use by car owners of detail standards of construction as brought about through the operation of the rules, so that when the association felt that certain standards of construction were necessary for the safe operation of cars, they would not be permitted to be interchanged without the use of these standards.

I might mention at this time that no country in the world has gone so far with standardization of railway equipment as have the United States, Canada and Mexico, particularly by reason of standard gage track, which permits of the interchangeability of cars throughout the entire area mentioned. I might cite as an instance Australia, with about seven railway systems and six different gages of track. At no interchange point can a car be interchanged from one railway system to the other, resulting in all freight being transferred at the end of each line.

In 1887, an Arbitration Committee was established for the settling of disputes arising under the rules between members of the association in reference to a correct understanding of the rules with reference to car maintenance and also as to correctness of charges. During this period, approximately 1,200 cases have been arbitrated.

The association promulgated rules for the loading of materials on open cars, thereby preventing the shifting of loads in transit and the consequent accidents. The safety appliances approved by the Interstate Commerce Commission were its standards, and their rules were distributed to the members. In 1903, as the result of serious accidents in the transportation of inflammable liquids, it became necessary for the association to regulate the construction of tank cars, and in that year the first specifications were issued, not only making immediately necessary requirements for cars then in existence, but prescribing much higher standards for cars to be built. As new uses for tank



C. E. Chambers
Chairman, General Committee

brake has been prepared and generally distributed among railway employees.

The railroad car of to-day is simply a vehicle of transportation, no matter by what railroad it is owned, the object being to furnish a vehicle suitable for the lading, and transport that lading to destination as expeditiously as possible. The railroad car is subject to very severe handling in trains and certain defects naturally develop which need to be kept in repair.

Rules Governing Interchange and Repairs

To take care of this condition this association has formulated and maintains rules for the interchange of traffic in so far as they relate to the physical condition of the car, so that the traffic itself may not be delayed. By these rules of interchange, the immense movement of traffic between railroads is carried on with a minimum of delay due to the defective condition of the car. The efforts of the association through these interchange rules were: (1) To establish rules which will uniformly permit of the prompt interchange of traffic between the various railroads without undue delay to the shipment of the car, which might be brought about by a difference of opinion between the receiving and delivering line as to responsibility for the physical condition of the car or the method of loading on open top cars. (2) To provide, through allowances, as given in the rules, prices to be charged for materials, detail times for completing the various items of repairs and a uniform labor rate per hour for the work. (3) Uniformity in compiling charges as between car owners for the maintenance of the equipment of the country. (4) Fixed allowances to enable car owners to properly check bills for car repairs made against them by other handling companies. (5) To provide methods for reimburs-



W. J. Tollerton
Vice-Chairman, General Committee

cars arose, the specifications have been modified to suit them, and since the establishment of the Bureau of Explosives this association and the bureau have closely co-operated in all matters relating to tank cars. The result has been to materially strengthen the rules relating to their construction and use. At the present time, such cars are provided not only for the transportation of the petroleum products, but also for food products, as well as poisonous liquids, such as liquefied gases.

Amalgamation of Railway Mechanical Associations

About ten years ago it was suggested that the Master Car Builders' Association and the American Railway Master Mechanics' Association, consolidate under one organization to be called the American Railway Mechanical Association, or some suitable name. Committees on consolidation were appointed by each association and reports rendered in the negative. On one or two occasions since, the question was again brought up, with a similar result.

Early in the year 1918, after the railroads had been taken over by the United States Government, the Director General requested that the individual associations of railway officers be amalgamated into one body, the American Railway Association, made up of different sections, each section to carry on its respective part of the railway program, and having its Chairman, Vice-Chairman and General Committee continuing the same subject committees, holding their regular accustomed annual meetings or conventions and submitting their findings to the Executive Committee of the parent association for approval and placing into effect.

On May 2nd, 1918, a meeting was called by the president of the American Railway Association to comply with the request of the Director General that the several Associations be amalgamated to form one congress of Associations, inviting the attendance of the presidents of the different voluntary railway associations. It was decided to put the matter to a vote of the executive committees of the different bodies, resulting in a favorable vote for amalgamation by the American Railway Master Mechanics' Association, and the Master Car Builders' Association. What was formerly the American Railway Association was changed to the American Railroad Association, of which the American Railway Master Mechanics' Association and the Master Car Builders' Association were combined, and known as Section III—Mechanical, and as such we convene to-day at our first annual convention.

As the Master Car Builders' Association, the rules were recommendatory and not mandatory. As Section III—Mechanical of the American Railroad Association, the rules will be made mandatory, and the efforts of the committees handling the different subjects will, therefore, be much better recognized. In the past, much overlapping committee work has been done, by reason of the different bodies having individual committees to handle subjects that might in some day effect them, but under the present organization, this duplication of work should be minimized, for all subjects of a mechanical nature will be referred to Section III, and its findings will be final. You will, therefore, recognize how carefully a committee must consider a subject before making final submission, which means, without question, placing into effect.

Prospects for Further Development

The membership should not in any way decrease, but on the contrary, should increase, for the reason that railroads can have as many members as they desire, there being no limit placed as to the number of associate members a railroad may wish to have represent them in the section, although on letter ballots affecting standards, votes will be on the basis of locomotives and cars owned, and ballots cash by representative members designated by the railroads.

There will be no dues paid by the members, for the reason that the railroad companies, through the American Railroad Association, by assessment, will pay the expenses of the section, but affiliated members will be charged a reasonable amount for the proceedings and literature furnished them throughout the year. It is, therefore, apparent that our interests should grow and the scope of activities be greatly broadened, and I predict that through such an arrangement, it will be so entirely satisfactory to the members of both the Master Car Builders' Association and the American Railway Master Mechanics' Association, that after the railroads have been turned back by the government to the corporate owners, no one will wish to return to the old methods of handling the matters pertaining to the locomotive and car departments.

I would also suggest for your serious and careful consideration that the Air Brake Association, American Railway Tool Foremen's Association, Chief Interchange Car Inspectors and Car Foremen's Association, International Railway Master Blacksmiths' Association, International Railway General Foremen's

Association, Master Boilermakers' Association, Master Car and Locomotive Painters' Association, American Railroad Master Tinner's, Copper-Smiths and Pipe Fitters' Association, Association of Railway Electrical Engineers, and the Travelling Engineers' Association be made a part of Section III—Mechanical, and the committees which in most instances have been overlapping, become committees in Section III—Mechanical. This, to my mind, would not only very much strengthen their efforts, but would also make it possible to immediately put into effect their accepted recommendations, for the reason that they would have the approval and backing of Section III—Mechanical, which is an identified part of the American Railroad Association.

The work of designing a standard box car was undertaken by the Master Car Builders' Association some years ago, and owing to the slow progress made, the matter was referred to a committee of presidents of the American Railway Association for further development. In due time, however, the matter was turned back to a committee of the Master Car Builders' Association for completion, and was just about completed when the railroads were taken over by the government. During the period of federal control, 100,000 standard freight cars of different capacities and types have been arranged for and partially built.

The Master Car Builders' Association should be credited with having done remarkably well under the old organization and arrangement. The ardor and enthusiasm of committees has been dampened many times by reason of failure to approve their recommendations after they had conscientiously spent much time on their work. They were not supported constructively by statements from negatively voting roads, as to the reason for their having so voted. It is suggested that, under the new organization, negatively voting roads should be obliged to sustain such a negative vote by a statement covering the reason therefor, together with constructive suggestions.

Activities of Committees

It may not be amiss here to call attention to what seems to be a misconception on the part of some of the members of committees in writing their reports. They seem to have the opinion that what is required of them is to prepare a series of questions, which are sent to members, and that all the work which the committee can be expected to do thereafter is to report and tabulate the replies received in answer to those inquiries. In most cases, a report on any subject should involve much more work than this.

A committee report frequently relates to some subject which is imperfectly understood, or in which there is apparently a diversity of practice, the reason for which is not evident. In most cases, the list of questions formulated by a committee indicates that they are not giving the subjects sufficient study to know what information is really desired. The committee should give the subject such prior study as to develop clearly the points on which facts must be obtained before conclusions can be drawn. In most cases, it is a diversity of practice which, if possible, is to be reconciled. In such cases, the questions should include suggestions, which would develop the reasons for such diversity. Finally, when answers to these questions are received, the committee should be a little more than a tabulating machine. They should present to the association, in all cases, their conclusion, giving the reasons therefor, remembering that the association looks to the committee for guidance in taking necessary action.

I would ask you to carefully consider the individual papers which will be presented at this convention, for in them will be brought out many beneficial thoughts for our future service. I would direct your attention to the report of the Committee on Standards, and suggest not only that its present recommendations be carried out, but that standardization, so far as is practicable, be given serious consideration in the future, especially as applied to freight car equipment. The difficulty experienced in the operation of freight car equipment, when pooled, evidenced the necessity of closer co-operation in the design of common parts necessary in the repair and upkeep of the equipment. Many parts can be standardized without interference with the many requirements. We have reached the time when freight car equipment of given capacities should be considered of entirely interchangeable parts, which are subject to breakage, or wear and tear.

I would ask that you give serious consideration to the report of the Committee on Car Trucks, calling for the restencilling of freight car equipment in a manner which will take care of the long debated question of axle loading, not only increasing the possible load on much freight car equipment, but also taking care of the weaker constructed cars that should not now permit of the regular 10 per cent. overloading.

The report from the Committee on Train Brake and Signal Equipment should receive careful consideration, as there are many changes which can yet be made without interference, that will add greatly to the practicability of interchange movement.

There is no more important committee than the one handling Brake Shoe and Brake Beam Equipment. The adoption of a standard brake beam for freight car equipment is of vital concern to all railroads, and in the design, due consideration should be given to the existing equipment, and if possible, it should be made entirely interchangeable with the present type of truck. I would, therefore, ask your serious consideration of the recommendations of that committee before its acceptance or disapproval.

I would ask that you show your appreciation of the untiring efforts of the Arbitration Committee by adopting their recommendations. I do this knowing that few of the members realize the amount of time and energy devoted by this committee each year to the questions involved.

There is practically nothing recommended by the Committee on Prices for Labor and Material, by reason of the abnormal period passed through during war conditions, which necessitated changing prices, which it was thought could be best accomplished by the addition of an agreed percentage, rather than undertaking to make a complete revision of all prices. It now seems pertinent, however, that the entire subject should be reviewed and recommendations made at the 1920 convention, for a complete new set of prices.

I would ask your serious consideration of the report of the Committee on Depreciation of Freight Cars. The importance of this subject merits a free discussion. An adequate depreciation which does not provide a reserve, which added to the scrap value of the retired equipment, replaces the original cost, really means that we are consuming the capital investment. On the other hand, it must not pad the expense of operation as a means of providing concealed assets.

The large interchange of passenger car equipment during the past two years had made it necessary to recommend several changes in the passenger car rules of interchange, and I request that you make a careful study of the recommendations of that Committee.

The Committee on Standard Blocking for Cradles of Car Dumping Machines has made some helpful recommendations. A casual observation of our open top cars of the older type signifies the necessity for changes in this practice, and everything possible should be done to protect this equipment from the present abuses.

A number of recommendations have been made by the Committee on Specifications and Tests of Materials, and knowing the difficulty encountered by many of the railroads in obtaining personal knowledge and the exhaustive study made of the subject by the committee, I recommend the acceptance of their report.

The Committee on Welding Truck Sides, Bolsters, etc., was continued from 1918, and requested to make a further study of the art. An extensive report has been submitted as to reliable practices consistent with our service, and inasmuch as this is a subject of vital importance to all, I request your careful consideration before adoption or rejection.

I would direct your serious thought to the report of the Committee on Couplers, and ask your careful consideration of its

recommendations. There is no longer any question as to the practicability of the standard coupler, and the only thing involved is the expense brought about in the changes asked for.

I would direct your attention to the expiration of the time limit in which all cars are to be equipped with safety appliances, namely, September 1st, 1919. There are yet many thousands of cars in the United States and Canada not equipped, and after that date, no car will be allowed to be used until so equipped. This will mean that the carrying road will be required to make such application on whatever cars remain on its line before offering them in interchange.

By reason of the numerous commodities offered for shipment during the past two or three years, the Committee on Loading Rules has had considerable activity, and a number of recommendations have been made for your acceptance.

I would ask your careful consideration of the report of the Committee on Train Lighting and Equipment. Their report is an interesting one, and worthy of careful study. I would suggest that their recommendations be accepted, and the committee continued.

I would ask your hearty support to the Committee on Tank Cars. This has been probably one of the most active committees during the war period, by reason of the many new products presented for transportation, and the promptness of action required. Just now some perplexing problems are in progress that need the backing of the Mechanical Section and the Bureau of Explosives.

In calling your attention to the inroads on our members by the grim reaper, Death, I feel it pertinent to remind you of the remarks of President MacBain at the 1916 convention, calling attention to the long and faithful service of former Secretary Joseph W. Taylor, who at that time, had been with the association 26 years; during 17 of which he had been secretary. While his name is not included in the report of the past year, yet since our last convention in Atlantic City, he has left his labors on earth for his eternal reward. I make special mention of him, because of his long and continued service.

I would also call your attention to the passing on of Dr. Angus Sinclair, Editor of Locomotive Engineering, and a member of both the Master Car Builders' and American Railway Master Mechanics' Association, having served for more than 18 years as treasurer of the American Railway Master Mechanics' Association. Up to the time of his death, Dr. Sinclair was probably one of the most generally known mechanical men in the United States.

To the officers of the association, and especially the secretary and general secretary, I express my sincere thanks for the splendid assistance accorded me during my term of office. To our fellow workers, the Railway Supply Mens' Association, I extend thanks for their continued efforts in making our conventions what they are. To the Hotel Mens' Association, I also desire to extend thanks for their splendid part in arranging for the comforts of our members and families. In closing, I trust the sessions at this convention will be but a repetition of the past, and that great good may come from them to the public at large. The members of the association, I again thank for the privilege of serving during the past three years.

Association Business

The minutes of the 1918 convention were adopted as printed.

The chairman announced that, as the Executive Committee had held several meetings during the period since the last convention and had matters well cleaned up, the usual session on the night prior to the opening of the convention was omitted.

Report of General Committee

AS AUTHORIZED BY Articles VI of the Constitutions of the American Railway Master Mechanics' and Master Car Builders' Associations, the Executive Committees have during the past year taken action on several important questions. This action is outlined in this report of the General Committee and your approval is respectfully requested.

On January 28, 1918, the Director General of Railroads issued General Order No. 6, directing that "Carriers' operating reve-

nues shall not be expended for the payment of persons or agencies constituting associations of carriers, unless such association is approved in advanced by the Director General." The Master Car Builders' and American Railway Master Mechanics' Associations made application and received temporary approval for the use of the funds already on hand to pay the current expenses of the association until April 30, 1918. On April 26, 1918, the Director General approved, until further ordered, the



F. McManamy

V. R. Hawthorne
Secretary
Mechanical Section, A. R. A.

F. F. Gaines



C. B. Young



J. S. Lentz



M. K. Barnum



I. S. Downing

J. E. Fairbanks
Secretary
American Railroad Association

C. E. Fuller

Members of the General Committee in Charge of the Mechanical Section
of the American Railroad Association



J. W. Small



T. H. Goodnow



A. Kearney



C. F. Giles



J. E. O'Brien



A. P. Prendergast



J. Coleman



H. R. Warnock



W. H. Winterrowd

Members of the General Committee in Charge of the Mechanical Section
of the American Railroad Association

American Railway Master Mechanics' and the Master Car Builders' Associations and authorized making such assessments, and the carriers paying the same, as may be necessary for the current expenses of the association.

On January 10, 1919, the Director General of Railroads issued Circular No. 70: "To provide, during the period of Federal control, a responsible channel through which the Director General may obtain recommendations for the advancement of railroad practice." The scope of the American Railroad Association (formerly American Railway Association) has been enlarged and among other associations covers the former activities of the American Railway Master Mechanics' and Master Car Builders' Associations. Railroads under Federal control are members of the association (American Railroad Association) and are directed to be represented and participate in the activities of each section through their proper officers.

On May 2, 1918, a conference of presidents of voluntary railroad organizations was held at 75 Church Street, New York, at the call of Acting President Thompson, of the American Railway Association, to comply with the request of the Director General that the several associations be amalgamated to form one congress of associations.

On May 14, 1918, the Executive Committees of the American Railway Master Mechanics' and Master Car Builders' Associations held a joint conference at Chicago. A plan was outlined and was submitted to the joint conference of the several railroad organizations. Since that time the American Railway Association (Order No. 70) has been changed to the American Railroad Association and its scope enlarged so as to include, among other associations, The American Railway Master Mechanics' and Master Car Builders' Associations.

On November 19, 1918, the Executive Committee of the Master Car Builders' Association, at a conference held with Acting President Thompson, of the American Railway Association, agreed to accept the proposed method of organization for the American Railroad Association and to become a part of the Mechanical Section of that organization.

On December 5, 1918, a special committee composed of the presidents and representatives of the Executive Committees of the American Railway Master Mechanics' and Master Car Builders' Associations held a conference at 75 Church Street, New York, and prepared tentative Rules of Order to govern the Mechanical Section.

On February 1, 1919, a joint conference of the Executive Committees of The American Railway Master Mechanics' Association and the Master Car Builders' Association was held at 75 Church Street, and tentative Rules of Order for Section III—Mechanical, were approved and adopted, and a tentative General Committee to govern the section was elected.

The committees of the American Railway Master Mechanics' Association and the Master Car Builders' Association have been continued and will handle their work as they have in the past. No change in personnel, outline of work or procedure in handling reports has been made except that the secretary of the section will act as secretary of all committees.

The scope of the activities of the associations will be greatly enlarged, and in the future the Mechanical Section will handle exclusively all work pertaining to the mechanical design, maintenance and repair of railroad motive power and rolling stock.

All memberships in the American Railway Master Mechanics' and Master Car Builders' Associations are transferred to the Mechanical Section of the American Railroad Association. Representative members are appointed by their respective railroads, as in the past; all others on the membership lists will be termed affiliated or life members of the Mechanical Section.

At a meeting of the General Committee for Section III—Mechanical, of the American Railroad Association held at the Traymore Hotel, Atlantic City, N. J., Monday, February 17, 1919, the following resolutions were passed:

Resolved, That all accounts accruing against the Master Car Builders' Association and the American Railway Master Mechanics' Association be requested to audit the books and accounts shall be paid out of the treasury, and be it further

Resolved, That the funds of the Master Car Builders' Association and the American Railway Master Mechanics' Association, on hand in its treasury as of February 28, 1919, shall be transferred to the Treasurer of the American Railroad Association, including all books, papers and accounts payable and accounts receivable, and be it further

Resolved, That the Auditing Committee of the Master Car

Builders' Association and the American Railway Master Mechanics' Association be requested to audit the books and accounts of the Secretary and Treasurer, as of midnight, February 28, 1919, for the purpose of closing the transactions of these associations and transferring all funds and accounts thereof to the Treasurer of the American Railroad Association as of the same date and hour, and be it further

Resolved, That the office furniture, fixtures, stationery, records, files, etc., as indicated in the inventory when submitted by the Auditing Committee as of February 28, 1919, shall be transferred to the American Railroad Association, and be it further

Resolved, That any securities which may be transferred to the Treasurer of the American Railroad Association are to be held by him as custodian and are only subject to the orders of the General Committee, and be it further

Resolved, That before the scholarship funds of the American Railway Master Mechanics' Association are transferred to the Treasurer of the American Railroad Association, a committee of three be appointed by the Chairman to take whatever steps may be necessary to protect the continuation of such fund.

The necessary details in connection with the transfer of activities, funds and securities of the American Railway Master Mechanics' Association and the Master Car Builders' Association have been consummated and the interests of the above named associations properly safeguarded.

The committee, in accordance with Section 2 (f) of the Rules or Order, offers the names of the following members as candidates for the Committee on Nominations:

F. W. Brazier, New York Central; Jos. Hainen, Southern; W. J. Robider, Canadian Pacific; J. Purcell, A. T. & S. F.; J. J. Hennessey, C. M. & St. P.; J. T. Wallis, Pennsylvania; D. R. MacBain, New York Central; H. T. Bentley, C. & N. W.; Willard Kells, Atlantic Coast Line, and A. C. Deverell, Great Northern.

Secretary's Report

The report of the Secretary, which was appended to the report of the General Committee, showed the receipts of the Master Car Builders' Association from June 18, 1918, to March 21, 1919, to be \$33,224. The disbursements during the same period were \$22,720, leaving a balance of \$10,503. The receipts of the American Railway Master Mechanics' Association were \$10,085, and the expenses \$5,343, leaving a balance of \$4,741.

The membership statement submitted by the secretary showed the Master Car Builders' Association to have 1,029 members, and the American Railway Master Mechanics' Association 1,047 members. The memberships in both associations have been transferred to the American Railroad Association, and are classified as follows: Representative members, 442; affiliated members, 1,085; and life members, 108, making a total of 1,635 members. All those holding life membership in the Master Car Builders' Association, or honorary membership in the Master Mechanics Association, and all members who have served as president of either association, together with representative members who have been in good standing in either association for twenty years or more, have been designated as life members.

The report as read was accepted.

Report of the Committee on Scholarships

THE COMMITTEE ON SCHOLARSHIPS, consisting of W. J. Tollerton, C. E. Fuller and H. R. Warnock, submitted a report in accordance with the resolution adopted by the General Committee. It was found that the scholarships at the Stevens Institute of Technology are perpetual, and the absolute property of the association, having been endowed from the entertainment fund left over from the convention of 1872, and the interest which accumulated on this fund until 1891. It was decided, by the General Committee, that the earnings on the bonds and securities of both associations, held in trust by the treasurer, should be prorated among the holders of the four scholarships at the Stevens Institute of Technology each year. Since 1903 Joseph T. Ryerson & Son have provided scholarships, which have been awarded by the American Railway Master Mechanics' Association, and the company has agreed to continue this arrangement with the Mechanical Section of the American Railroad Association.

The report is signed by C. E. Chambers (Chairman), United States Railroad Administration; W. J. Tollerton (Vice-Chairman), Chicago, Rock Island & Pacific; Frank McManamy,

United States Railroad Administration; C. B. Young, United States Railroad Administration; F. F. Gaines, United States Railroad Administration; T. H. Goodnow, Chicago & North Western; H. R. Warnock, Chicago, Milwaukee & St. Paul; J. E. O'Brien, Missouri Pacific; A. P. Prendergast, Texas & Pacific; J. W. Small, United States Railroad Administration; C. F.

Giles, Louisville & Nashville; C. E. Fuller, Union Pacific; I. S. Downing, Cincinnati, Cleveland, Chicago & St. Louis; Jno. S. Lentz, Lehigh Valley; Jno. R. Gould, Chesapeake & Ohio; A. Kearney, Norfolk & Western; M. K. Barnum, Baltimore & Ohio; Jas. Coleman, Grand Trunk, and W. H. Winterrowd, Canadian Pacific. This report was accepted as read.

Report of Committee on Nominations



F. W. Brazier
Chairman

and Tests Section, U. S. R. A., and F. F. Gaines, chairman, Board of Railroad Wages and Working Conditions, U. S. R.

AS the present General Committee is a tentative committee to serve only until this convention, the committee nominated a chairman and seven members for the General Committee to serve for two years, and a vice-chairman and seven members of the General Committee to serve for one year. This will provide that future nominations for the General Committee can be made for the regular two-year term in accordance with the Rules of Order. In addition, Frank McManamy, assistant director, Division of Operation, U. S. R. A., C. B. Young, manager, Inspection

A., are also members of the General Committee representing the Railroad Administration in accordance with Section 2 (b) of the Rules of Order.

The committee nominated the following to serve for two years:

For Chairman, W. J. Tollerton, G. M. S., Chicago, Rock Island & Pacific. For Members of the General Committee, J. T. Wallis, G. S. M. P., Pennsylvania; T. H. Goodnow, S. C. D., Chicago & North Western; W. H. Winterrowd, C. M. E., Canadian Pacific; C. H. Hogan, A. S. M. P., New York Central; J. E. O'Brien, M. S., Missouri Pacific; A. Kearney, S. M. P., Norfolk & Western, and C. F. Giles, S. M., Louisville & Nashville.

To serve for one year: For Vice-Chairman, Jas. Coleman, S. C. D., Grand Trunk. For Members of the General Committee, J. W. Small, Mech. Asst., Southern Region; Jno. S. Lentz, M. C. B., Lehigh Valley; H. R. Warnock, G. S. M. P., Chicago, Milwaukee & St. Paul; C. E. Fuller, S. M. P., Union Pacific; Samuel Lynn, M. C. B., Pittsburgh & Lake Erie; A. P. Prendergast, M. S., Texas & Pacific, and Jno. R. Gould, S. M. P., Chesapeake & Ohio.

The report is signed by F. W. Brazier (Chairman), New York Central; J. Hainen, Southern; W. J. Robider, Canadian Pacific; John Purcell, Atchison, Topeka & Santa Fe, and J. J. Hennessey, Chicago, Milwaukee & St. Paul.

This report was accepted.

Report on Standards and Recommended Practice (M. C. B.)

AFTER CONSIDERATION of the present Standards and Recommended Practice of the Master Car Builders' Association, together with replies received to the Circular of Inquiry, sent to all members, the committee submits the following report:

JOURNAL BOX AND DETAILS. (STANDARD. Pages 472-476. Sheets M. C. B. 3, 6, 9, 12-C.)

A subscriber requests information as to whether the skeleton brass, as shown in Fig. 1, meets M. C. B. requirements. The committee is of the opinion that the journal bearing in question does not conform to standard M. C. B. construction.

LETTERING AND MARKING OF CARS. (STANDARD. Pages 611-616. Sheets M. C. B. 26, 26-A and 26-B.)

A member recommends a standard stencil including the wording, style and size of lettering, and location, for marking cars that have had journal boxes repacked, suggesting the words "Repacked 1-10-19" in 1-in. block letters and figures, located on the outside of the car as close as possible to the middle of the car, but not behind any doors.

The committee has referred this matter to the Arbitration Committee with the suggestion that the rule in question be revised to require this stencil to appear at diagonal right-hand corners of car and to recommend to the association that this stenciling should be shown on M. C. B. Sheets 26 and 26-A.

LETTERING AND MARKING OF CARS (STANDARD. Pages 611-616. Sheets M. C. B. 26, 26-A and 26-B.)

A member calls attention to the difficulty experienced by yard clerks and other similar employees in deciphering the numbers on stock cars at night, primarily due to the fact that the numbering and lettering of this type of car is ordinarily on a letter board located near the eaves of the car, and suggests that a standard method be established for applying the marking on stock cars to overcome this difficulty. The committee believes the location indicated for house cars on M. C. B. Sheet No. 26 meets all the requirements.

The Western Weighing and Inspection Bureau calls attention to a variation in the size of figures used to indicate the light weight of cars, which light weight is a very important factor in arriving at correct freight charges on a large percent of car-

load freight. An analysis of the information furnished indicates that cases of improper size of letters and figures are the result of light weighing stations using the wrong-sized stencils, and



Fig. 1.—Skeleton Journal Box, Brass

the attention of the members is called to the fact that light weighing stations should be furnished with the correct size of stencils, so as to comply with M. C. B. standard lettering, as shown on Sheets Nos. 26, 26-A and 26-B, and that when stenciling the new light weight cars should be used to completely obliterate the old stenciling, and a good grade of paint used and applied in a strictly workmanlike manner.

PIPE UNIONS (STANDARD. Page 618.)

The standardization of pipe unions, both flat and ball joint types, as concerns the contour and interchangeability of parts, which was a matter of special investigation with the A. S. M. E. and A. R. M. M. Association, in accord with the action of the 1916 convention, and which was dormant during the war period, has again been taken up with those associations. Progress only, at this time, is reported.

SPECIFICATIONS FOR BOLTS AND NUTS (STANDARD. Pages 619-623.)

A member calls attention to the difference in the specified dimension of bar stock for rods and nuts between the association's specifications and commercial practice, and suggests that the specifications be revised to permit acceptable tolerances. The committee suggests the matter be carried over for further consideration and report.

STEAM AND AIR CONNECTIONS FOR PASSENGER CARS (RECOMMENDED PRACTICE. Pages 918.

Sheet M. C. B. Q-1.)

Under instructions from the General Committee, the matter of steam heat hose couplers was to be investigated and a recommendation made to the United States Railroad Administration for a standard in so far as interchangeability and locking are concerned. The committee has canvassed the situation with the manufacturers and users of steam heat hose couplings, and owing to considerable variation in the type of locks on couplers as now in use and the fact that the openings do not properly register, the committee can, at this time, only report progress.

DEFINITIONS AND DESIGNATING LETTERS OF GENERAL SERVICE FREIGHT EQUIPMENT CARS. (RECOMMENDED PRACTICE. Pages 946-949.)

A member recommends separate designating letters for single-deck and double-deck stock cars. The committee concurs with the recommendation and suggests that the designation "S. M." for stock cars, be revised by eliminating the words "or double"; that a new designation be provided, "S. C." reading the same as designation "S. M.—Stock Cars" with the exception of substituting the words "convertible single or double deck" for words "single or double deck"; and that another new designation be provided, "S. F." substituting the words "fixed double deck" for the words "single or double deck."

STANDARD FRICTION DRAFT GEARS

The following was suggested by a member: "There are several makes of friction draft gears which will go into the prescribed space of $12\frac{1}{4}$ by $24\frac{1}{2}$ in., but some of these gears use a modified front stop which has a limiting stop in combination, which limiting stop encroaches upon the rectangular clearance, quoted above. By comparatively slight modifications in the castings of the various gears, however, and also in the travel, they could all be made to go into the same space, including the use of the limiting stop, and we would recommend that this matter be referred to the Draft Gear Committee to see if it can not be worked out." The committee has referred this to the Committee on Draft Gears.

MISCELLANEOUS

A member suggests that a limit should be placed on the welding and reclaiming of various parts, such as couplers, side frames, etc., and that the practice of welding should eliminate any possibility of relying on the judgment of one man as to whether or not the part in question would be serviceable after being thus repaired. The committee has referred this subject to the Committee on Welding Truck Side Frames, Bolsters and Arch Bars.

The report is signed by T. H. Goodnow (Chairman), Chicago & North Western; C. E. Fuller, Union Pacific; A. R. Ayers, New York, Chicago & St. Louis; O. C. Cromwell, Baltimore & Ohio; O. J. Parks, General American Tank Car Corporation; Willard Kells, Atlantic Coast Line; C. F. Thiele, Pennsylvania, and A. G. Trumbull, Erie.

After the reading of the printed report, Mr. Goodnow said:

Since the report was printed, a member of the association made a suggestion, which has been turned over to the committee, but on which no action has been taken, and I simply read it at this time as it can be included in the report if the association sees fit to act on it. It is as follows:

"I would suggest that the standard lettering on freight cars be reconsidered with a view to simplifying the same. The points I wish to bring out are the following:

"The present stenciling calls for the capacity in pounds and cubic feet, and it is generally understood that the cars can be loaded to 10 per cent. beyond the marked capacity. I believe the terms 'nominal capacity' and 'load limit' should be used in preference to avoid overloading the car axles, the maximum load limit being based on the difference between the light weight of car and the total weight as noted in column A of table on

axles in M. C. B. Rule No. 86. Likewise some standard should prevail covering the size of letters used in the lettering, showing the name of the railroad company. Reference to specialties, such as triple valves, coupler shanks, brake beams, etc., can be omitted.

"In order to reduce the number of stencils to a minimum, option should not prevail as to the use of two or three-inch letters for any of the legends, as one or the other size should be standard."

F. F. Gaines: Referring to the committee's report in regard to the steam heat coupler, the Committee on Standards of the United States Railroad Administration has spent considerable time on that subject during the past year, and it seems proper to suggest that the standards they have adopted be the M. C. B. standard, at least during the period of federal control, and should be incorporated in this report as it is finally submitted.

The Chairman conferred with the Administration, and that will be taken care of. Any papers and standards that they may have had will be included in the report of this committee. If there are no further remarks, we will take up the next paper.

George S. Goodwin (C. R. I. & P.): I would like to ask whether it is the intention of the Arbitration Committee to publish the stenciling for the repacking of boxes. This was covered on page four, and the suggestion was made there that the boxes be marked "Repacked 1-10-19" and referred to the Arbitration Committee. They made no mention of it in the report. These cars are being marked now with all kinds of stenciling, and I think some standard marking of cars should obtain.

Chairman: Does any member of the Arbitration Committee want to make any answer to that?

Mr. Goodnow: I understand that the Arbitration Committee did not include that in its report to the present convention; just why no action was taken on that I am unprepared to say.

Mr. Fuller: At the time of the meeting of the committee that report was not before the committee; therefore, no action was taken on it.

Chairman: It is my understanding that this will be incorporated in the writing of the Rules.

J. A. Donahey (A. C. & Y.): The lettering and marking of cars, where it speaks of "light weighing stations," should be "re-weighing stations."

Chairman: We will see that that is corrected.

Mr. Goodnow: I would like to ask regarding the action on the motion to adopt this report, whether or not it included the letter which I read. For the benefit of the Committee on Standards, I really think it should not include that. The Committee on Standards has been more the custodian of the historical records of the Association. It is not an investigating committee, and this carries with it certain changes in the M. C. C. standards which I don't think ought to be acted on this year, but rather that they be carried over.

Mr. Fuller: When I made that motion I did not intend to include anything other than the committee's report.

Chairman: Well, that will be the understanding. The letter, as I understand it, was simply a suggestion for consideration.

Mr. Goodnow: It was really a recommendation for a change in the present M. C. B. standards.

Mr. Fuller: I did not understand that was a part of the committee's report, but was something that came in afterwards. My motion was merely to carry the committee's report only.

Mr. Goodnow: I would like to say for the benefit of the Committee on Standards that it has been the practice in sending out the circular of inquiry by the Committee on Standards, for suggestions, to confine these suggestions to matters of recommended practice and standards. Frequently subjects are sent to the Committee on Standards, which really apply to the work of standing or special committees and these suggestions should go to those committees. As the Committee on Standards cannot meet, until very near convention time, it has no opportunity to investigate the suggestions made, and can only refer them to the special or standing committee, which is directly concerned with the suggestion made; very often these suggestions reach the Committee on Standards too late to go before the convention. Those members who have suggestions which properly fall within the province of the work of other committees, should send them to the chairman of the General Committee direct, or to the particular committee concerned, and thus get the suggestions before the committee where they will be acted on.

The Committee on Standards in its report this year, so far as standardization is concerned, offers very little, if anything, of importance, and it will greatly expedite the handling of suggestions, if, for example, any suggestions which properly apply to the Truck Committee, or any other committee, go direct to those committees, not to the Committee on Standards. I make that suggestion in conformity with the suggestion made by the chairman in his address regarding the work of committees.

C. E. Fuller: Are not the suggestions all sent to the secretary?

Mr. Goodnow: They have not been in the past.

Mr. Fuller: Sent to you?

Mr. Goodnow: Sent to me as chairman of the Committee on Standards and Recommended Practices.

Mr. Fuller: Then I make a motion that in the future all suggestions of that kind be sent to the secretary of the association, and that the secretary send them to the proper committee, if there is a committee appointed to handle the matter to which the suggestion refers, otherwise that it be handled by the General Committee.

W. E. Dunham (C. & N. W.): I understand, after having conferred with the Secretary, that that is the procedure which will be followed out in the new organization; that all matters of this kind go through the Secretary, or the General Committee.

Chairman: That is my understanding. Are there any further remarks on Mr. Fuller's motion?

The motion was seconded, put to vote and carried.

J. J. Tatum (U. S. R. A.): I would like to ask Mr. Goodnow a question in connection with the marking on stock cars. It seems to me that that matter was brought up by the yardmen, who have to read the marking on the stock cars for their protection. In other words, they wanted safety, they wanted their lives protected. Now, the committee says, that "Your committee believes the location indicated for house cars on M. C. B. Sheet No. 26 meets all the requirements." I would like to ask Mr. Goodnow if he has consulted the Safety Section or any of the safety sections of the various railroads, as to whether or not that location would give the yardmen the protection they need, or whether the committee has simply decided it from the establishment of the marking shown in our records.

Mr. Goodnow: I would say that the majority of the roads have already adopted the practice of putting a number board on stock cars, and if they comply with the present M. C. B. standards they must do that to get the number down to a certain height from the top of the rail. The only way in which you can do that is to put an additional number board on the car and put a number on it. I think a large number of the stock cars are being taken care of in that way, and that is the only way in which they can be taken care of, and it meets the safety requirements. It came up on our road, through the Safety Section and several years ago we adopted the practice of putting on an additional board which carries the number at the height required under that standard.

Mr. Tatum: I agree with what Mr. Goodnow says, as far as that goes, but as a matter of fact the yardmen have complained of the location of the marking as shown by the marking sheets issued by the M. C. B., and it seems to me that the Committee on Standards should know if the location designated by the sheet referred to will give them the protection they need. I believe that the Committee on Standards should interview the men in the yard, who are doing this work.

Mr. Goodnow: The Committee on Standards will be glad to take that action. There is only one location for a number on any car at the present time, and that is definitely established in the standard. It is at a height in range with the line of vision of the average individual. That standard was established at the suggestion of the American Railroad Association some years ago and was included in the present M. C. B. standards at the suggestion of that association. It is not the number at the top along the eaves of the car where the ordinary stock car is numbered at the present time. The standard location on box cars is the standard location for that number. It has not changed on any particular style of equipment—it must be the same on stock cars or box cars or any house cars.

Mr. Tatum: I still agree with Mr. Goodnow as to what he said, but I am not convinced that we have satisfied the men who have to read this marking. Suppose we had to change our entire marking, to some other method of marking, to give the men the proper protection. If there is a

possibility of loss of life, under the present method of marking, we should prevent that possibility by changing the system of marking, and I believe the Committee on Standards should consult the safety sections of the various railroads doing this work, in order to determine whether or not it is satisfactorily located, and to locate the marking in that position where the men will get the protection they need. I suggest that that part of the subject be referred back to the committee for consideration.

F. F. Gaines: I think perhaps we can satisfy the point that Mr. Tatum brings up without very much work. If the standard location is that which is now shown; if it can be made a safe place by putting up a number board, and it becomes the standard of the association, it necessarily also becomes imperative to use that location, and do away with the old eaves lettering.

Chairman: I believe the matter was looked into from all sides before a decision was reached, as to the best position for the number board over the rail in the case of stock cars, and in taking action on stock cars it was decided to make it standard with other cars as heretofore shown. This was done by the arrangement of a number board, which could be placed at the proper height from the ground, to agree with the position of the number as on box or house cars. There is no objection to the suggestion made by Mr. Tatum, that the Committee on Standards shall write to the different railroad safety committees to ask if they have any suggestions to offer in connection with the matter. I imagine you will have as many suggestions as there are railroads, but you will at least receive information on the subject, and to that extent I think it would be advisable.

John McMullen (Erie): Inasmuch as the question has been raised by Mr. Tatum, from a safety point of view, it might be well to put these number boards closer together, rather than to have them spread apart, as they generally are—have the number board and the name of the road closer together, so there will be no space in which a man can insert his hand to climb up on the truck and the car. Another question is whether or not the number board should be placed higher on a stock car than on a house car, for the reason that the number board is likely to get smeared through the slats of the car.

Mr. Goodnow: We will be glad to confer with the Safety Section, as Mr. Tatum suggests. I do not see how, in connection with what Mr. McMullen says, that the number board can be changed. The number on the car is now placed where a man of ordinary height will best see it, when he is reading the numbers on successive cars in a train, and I think the numbers on stock cars are sufficiently high from the floor of the car to be kept in good readable condition. However, if it is the desire of the convention that we make any special location for stock cars, we can go into the matter further, but I think the main thing to do is, as far as possible, to keep a standard location for numbers, and then our clerks and those who have to read the numbers on the cars, and often get them in a hurry, need not look all over the car, but can look at one place on the car and get the number. That is an important feature in keeping a standard location for the numbers on all cars where it can be maintained.

F. F. Gaines: In order to put the association on good ground, I move that the subject of lettering on stock cars be referred to the committee for further consideration, and in giving it further consideration, they confer with the Safety Section, so that every item in connection with the matter will be taken care of.

C. E. Fuller (U. P.): Mr. Tatum made a suggestion. I ask him if he has heard of any complaint in regard to the location of the number of the stock cars on the board, which is a standard of the association.

J. J. Tatum: The Safety Section of the U. S. R. A. brought the matter to my attention, and asked me to have the M. C. B. Association do something to locate the marking so that it would protect the men who have to read it. They have had various complaints from men all over the country, that their lives were in jeopardy many times in trying to read the marking on the cars. The communications which they referred to me were referred to the Arbitration Committee for action, and were forwarded by that committee to the Committee on Standards. We have heard their action on the subject, as indicated in the report,

but it is a question whether the standards committee decided for the Safety Section or the various safety committees of the different railroads, that that was a safe location. I know, and you do, too, that the man who does the work knows more about the work to be done than the man who does not do it.

Mr. Fuller: Do you know whether they were referring to the numbers just under the eaves, or the numbers on the board about the height of the average man's eye?

Mr. Tatum: The statement was made that the numbers had been located in various places on the car, that there was no standard location, and that they did not think that the locations had been approved by the various railroads or were satisfactory. They did not say that the M. C. B. location on the box car was satisfactory or not satisfactory, but it appeared to me, inasmuch as they took exception to the location of the numbers on the stock cars, that the Safety Section was the proper section to consult and to ascertain from them what the objections were. We must stay with the Safety Section for all time, and we must do everything to protect the lives of the men who are more or less penalized in doing the work; there is no better way to solve the problem than to make it absolutely satisfactory to them.

Mr. Fuller: Is not a great deal of the trouble due to the fact that a number of the railroads have not complied with the standards, and have introduced variations in the standards, which has brought about the trouble?

Mr. Tatum: That may be true, but is it not better for us to find out whether that is so? We do not now know which is right and which is wrong, and we should find out. If our marking is right, when placed in the location established by the M. C. B. Association, then let us say it is right and approved by the safety sections of the railroads, and insist on the marking being located at that place for the safety of the men who are involved.

Mr. Fuller: That is just the reason I raised the question, because Mr. Tatum's remarks did not indicate whether the standard marking was wrong or not. I will second Mr. Gaines' motion, that the committee take up the question with a view of determining whether the standard location is proper or not. There is no necessity of this committee investigating a thousand and one heights. It is a uniform height that we have got now that should be used. Apparently, it has not been used, and I will second Mr. Gaines' motion.

Mr. George Gibbs (P. T. & T.): Was not this marking originally settled on because of a recommendation from the Car Service Association? Mr. Hill was then chairman. I have a recollection that they sent a communication to us through the American Railroad Association, recommending the uniform placing of these markings and suggesting the position for them, and giving the reasons, I should say, ten years ago. I suggest that the same body that made that recommendation be brought into this.

Mr. Goodnow: Mr. Gibbs is correct in what he says. The standard marking of cars, so far as the operating feature of it is concerned, was handled in that way. It was handled by the Committee on Relations of the American Railroad Association, and included in the M. C. B. standards at their suggestion, and as a result of the adoption on the part of the Association by letter ballot.

Mr. Tatum: I believe the position taken by Mr. Gibbs is well taken and I think that the American Railway Association should be brought in as a committee that passed on that marking and recommended it.

I. S. Downing (C. C. C. & St. L.): It seems to me this matter should go to the Transportation Department of some section. It is not a mechanical matter. So far as the safety is concerned, or the putting of the board down low enough for a man to get hold of, they might take hold of the slats in the stock car; they might take hold of the door. I don't think we ought to handle it except to send it back to the committee, or that part of the section of the American Railway Association, that told us to locate it in that location.

Chairman: I think that a subject of that kind is strictly a mechanical subject, and should be referred to none but Section III. They naturally would have to confer with the people who were affected in making their report, but it is rightfully a mechanical question.

Mr. Goodnow: If the motion, as now before the association, prevails, I think it will take care of it, as it simply will get the approval of the Safety Section on the standard location. If we get that approval, then the whole matter is settled.

R. H. Kleine (P. R. R.): I was chairman of the committee that fixed the present location for height of lettering on the cars. It was done at the request of the American Railroad Association about ten years ago. The distance from the top of the rail to the bottom of the board is, as I recall the figures, 5 ft. 9 in. with a variation of 6 in. either way. That is about as low as you can get a board on a house car and still get your capacity marking and your lightweight markings, underneath the same, and it was entirely agreeable to the American Railroad Association at that time. I believe the complaints in regard to the location of the present lettering is on cars that are not stenciled in accordance with the present standards.

Chairman: I think the motion will properly take care of it. The motion was unanimously carried.

Mr. Goodnow: As there is only one item that should go to letter ballot as I see it now—and that is "Definitions and Designating Letters of General Service Freight Equipment Cars"—the matter of separating the double deck, single deck, and convertible deck stock car, that should be included in the motion, so that one item will go to letter ballot this year.

Chairman: If there are no objections, that will be included in the motion. So ordered.

Committee on Train Brake and Signal Equipment



T. L. Burton
Chairman

condition of freight brake equipment and means of improving it. As a result of this meeting, Circular No. 20 on Air Brake Main-

SINCE THE ANNUAL MEETING of the M. C. B. Association in June, 1918, nine subjects have been referred to the Train Brake and Signal Equipment Committee, on which the following report is submitted:

PART I. AIR BRAKE MAINTENANCE

Acting under direction of the Executive Committee, the Train Brake and Signal Equipment Committee met in Buffalo on November 6th last, with the secretary, representatives of the Fuel Conservation Section, United States Railroad Administration, and the President of the Air Brake Association, for a discussion on the con-

tenance was issued by the Executive Committee and approved by the United States Railroad Administration.

PART II. ADJUSTMENT OF BRAKE POWER OR TANK CARS

Under date of December 28, 1918, a communication was received from the secretary enclosing an exchange of correspondence and blue-prints with the Tank Car Committee and the American Car & Foundry Company, and a request from the Executive Committee to have the Train Brake and Signal Committee review the question of hand brake power for tank cars, which was done. The committee's recommendations have been issued to the members in Circular S-III No. 3.

PART III. AIR BRAKE HOSE COUPLING PACKING RINGS AND GAGES

The committee's attention has been called to the fact that the recommended practice packing ring gage shown on Sheet Q-1 does not provide for tolerance dimensions of the flange of the air brake hose coupling packing ring shown on Sheet 18-A, and it has been suggested that this gage drawing should be revised to show minimum and maximum slots for the flange of the packing ring.

For years packing rings have been supplied in large quantities with less variation in flange thickness than can be detected with a

gage, and to make the change suggested would unnecessarily increase the chances for brake pipe leakage, therefore the committee does not concur in the suggestion; on the contrary it believes: (a) The gage shown on sheet Q-1 should be advanced to standard. The gage and packing ring to be drawn to larger scale and shown on the same sheet. (b) The packing ring drawing in the specifications should show nominal dimensions only, the tolerance dimensions to be provided for in the gage. (c) The packing ring specifications should include instructions on the use of the gage.

PART IV. BRAKE INSTALLATION

Attention has been called to the large number of loose brake cylinders, reservoirs and pipe clamps on freight cars, secured with bolts having single nuts. The committee's recommendations will,

racks, many of which are in use, be discontinued. It believes, however, that the use of the two racks should be made optional, and when a new rack is installed it should be the later type, and when the older racks require extensive repairs they should be converted. The proposed revised instructions on cleaning and testing triple valves, therefore, include drawings and operating instructions for both racks.

PART VII. STENCILING BRAKES

The Air Brake Association and the Northwest Air Brake Club recommend changing the stenciling for brake cylinders and triple valves when cleaned, lubricated, etc., so that but two lines will be required, one line to show the place, month, date and year of cleaning, and one line to show the initials of the road on which the work is done, the stencil to be applied to both sides of the

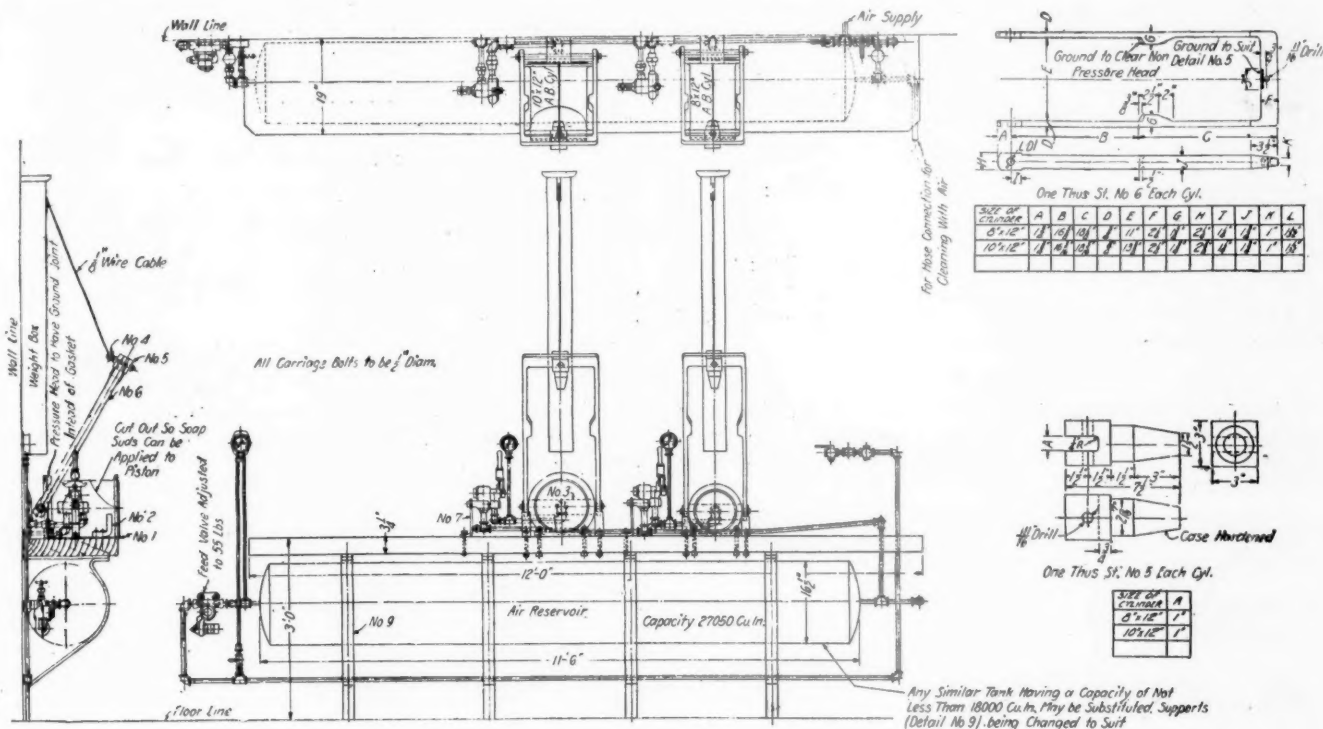


Fig. 1.—Brake Cylinder Packing Lever Test Rack

therefore, include a revision of Sheets 18 and 1 Q, to include double or lock nuts for such bolts.

PART V. CLEANING, LUBRICATING AND TESTING BRAKE CYLINDERS

It has been suggested that the brake cylinder piston and packing leather when removed should be taken to a shop conveniently located, where the leather should be cleaned by a man assigned to this work, and tested on a test rack. This method of cleaning and testing packing leathers is employed on several roads with most satisfactory results, and the committee believes the suggested method should be extended and ultimately made standard practice. Drawings for suitable test racks are, therefore, included in Exhibit C-1, to which suitable reference is made in the proposed instructions on annual repairs to freight brakes (Exhibit C).

PART VI. TRIPLE VALVE TEST RACK

Since the triple valve test rack, for which drawings are shown in existing instructions for cleaning and testing triple valves, was brought to the attention of the association, an improved test rack has been developed and is in extensive use on many roads. The committee also understands that many of the old racks have been converted to the later type, which can easily be done, and that any cleaned or repaired valve that will pass the prescribed test for the later rack will also pass the test prescribed for the older rack. The use of the former rack will, therefore, not conflict with the rules and instructions governing the cleaning and testing of triple valves.

While the committee recognizes the superiority of the later rack, it does not feel justified in recommending that the older

car or reservoir. The recommended form of stencil is concurred in, but the necessity for stenciling both sides of the reservoir or car is not conceded.

PART VIII. RETAINING VALVES FOR FREIGHT CARS

Attention has been called to the large number of different types and capacities of retaining valves required in order to make proper repairs to foreign cars, and it has been recommended making 15-30 and 25-50 lb. spring type retainers standard for all new cars built in the future, the 15-30 lb. valves to be used on cars under 80,000 lb. capacity, and the 25-50 lb. valves to be used on cars of 80,000 lb. capacity and over, and that a suitable test be formulated for cleaned or repaired retaining valves.

The matter of testing retaining valves is provided for in the proposed revised instructions on the maintenance of freight brakes, but the committee is not in possession of information which would justify it in recommending standard capacity retaining valves for all freight cars offered in interchange, and doubts if such information can be had without making some road investigations, which the committee to date has not been able to make. It believes, however, the association would be justified in adopting, as recommended practice, two-pressure spring type retaining valves of such capacity as may be required by individual roads, leaving the question of standard capacity open for further consideration, and so recommends.

If this recommendation carries, and a standard capacity retainer of the two-pressure spring type should subsequently be adopted, any retainers of this type then in use can, if they should not be of the capacity adopted, be easily converted to standard by simply changing the springs, which can be done at a very

nominal cost. Meanwhile the weighted type and the single pressure spring type retainers will have been abandoned for new equipment, and, in many cases, for repairs, thus going a long way toward accomplishing the object sought, *i. e.*, to reduce the number of valves carried in stock for repairs.

PART IX. RULES AND INSTRUCTIONS ON THE MAINTENANCE OF FREIGHT BRAKES

At the request of the General Committee, the standard instructions on the maintenance of freight brakes have been revised and divided into the following parts, as shown in Exhibits A, B, C and D. (a) Test and repairs to brakes in terminal yards. (b) Test and repairs to brakes on shop or repair tracks with brake stencils in date. (c) Annual repairs to brakes with stencils out of date. (d) Cleaning, lubricating and testing triple valves.

PART X. AIR BRAKE REPAIR TOOLS AND DEVICES

Several roads have submitted drawings showing useful tools and devices for use in making air brake repairs to freight cars. The committee reviewed a number of drawings submitted, some of which are shown in Exhibit C-1.

Recommendations

The committee recommends submitting to letter ballot:

FOR RECOMMENDED PRACTICE

1. That Sheet Q be revised by adding a note reading: "Bolts securing brake cylinders, auxiliary reservoir and pipe clamps, to have double nuts or lock nuts." 2. The adoption of spring type duplex retaining valves for freight equipment cars.

FOR STANDARD

1. Advancing to standard the recommended practice gage shown on Sheet Q-1 for air brake hose coupling packing rings. The gage, and the hose coupling packing ring now shown on

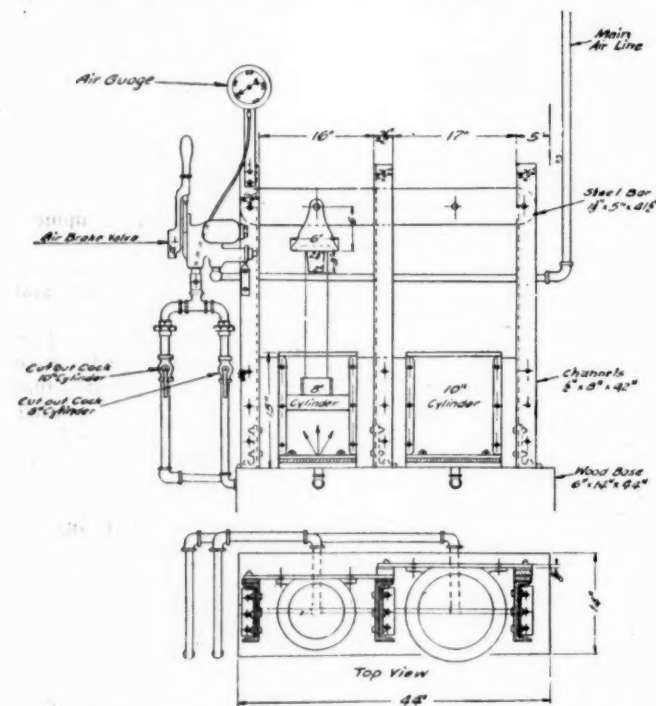


Fig. 2.—Brake Cylinder Packing Leather Test Rack

Sheet 18-A, to be shown on one (new) sheet. 2. That Sheet 18 be revised by adding a note to read: "Bolts securing brake cylinders, auxiliary reservoirs and pipe clamps to have double nuts or lock nuts." 3. Revised rules and instructions on the maintenance of freight brakes as shown in Exhibits A, B, C and D, voting separately on each exhibit.

The committee recommends that the following subjects be included in next year's work of this or a similar committee: 1. Revision of existing rules and instructions on the operation of train brake and signal equipment. 2. Cleaning and testing brake

cylinder packing leathers in a room or shop instead of under the car. 3. Capacity of standard retaining valves for freight cars. This subject to include such investigations as may be found necessary on the operation of retaining valves in grade service.

Rules and Instructions Governing the Maintenance of Brake Equipment on Freight Cars

EXHIBIT A.—TEST AND REPAIRS TO BRAKES ON CARS IN TERMINAL YARDS

1. Freight cars in terminal yards should have the air brakes tested as follows:

INCOMING TRAINS

2. Freight trains, on arrival at terminals where inspectors are stationed to make immediate brake inspection and repairs, shall have the slack stretched and shall be left with the brakes fully applied in service application. Inspection of brakes should be made as soon thereafter as practicable and any needed repairs made, or promptly mark for repair tracks any cars that cannot otherwise be repaired.

OUTGOING TRAINS AND YARD TESTS

3. While the train is being charged, make a visual inspection of retaining valves and retaining valve pipes, position of angle cocks and hose, and examine closely for leaks from the brake pipe and its connections, and make necessary repairs to reduce this leakage to a minimum when the brake system is charged to standard pressure.

4. When the brake is charged to standard pressure, make a 15-lb. service reduction, after which a second examination of the train should be made to determine: (a) Brake pipe leakage. (b) If triple valve will operate on service application. (c) Piston travel. (d) Brake cylinder leakage. (e) If the brakes release properly.

5. If, during this test, the brake pipe leakage, as indicated by the brake pipe gage, exceeds 8 lb. per minute, it should be reduced to 8 lb., preferably 5 lb., and if the piston travel is less than 6 in. or more than 8 in. it should be adjusted to 7 in. All defects found shall be repaired in the yards or the car sent to the shop or repair track for necessary attention.

6. In addition to the above terminal tests, at the last terminal inspection point prior to descending mountain grades, it must be known that a sufficient number of retaining valves are in good operating condition to control the train.

EXHIBIT B.—TEST AND REPAIRS TO BRAKES ON CARS ON SHOP OR REPAIR TRACKS WITH STENCILS IN DATE

1. All cars on shop and repair tracks (with stencils in date) should be connected to a yard air plant equipped with testing apparatus, and a dummy coupling attached to the hose on the

TYPE OF RETAINING VALVE	Position of Handle	Initial Cylinder Pressure	Combined leakage from the cylinder, retaining valve and pipe must not exceed that shown below Number pounds leakage per minute
15 lb. Single Pressure Spring and Weighted Type .....	.....	10 lb.	7
15-30 lb. Double Pressure Weighted Type .....	.....	20 lb.	10
15-30 lb. Double Pressure Spring Type	High	20 lb.	10
25-50 lb. Double Pressure Weighted Type	Low	10 lb.	7
25-50 lb. Double Pressure Spring Type	High	40 lb.	14
	Low	40 lb.	14
	Low	15 lb.	9

opposite end of the car. The pipe, including angle cocks, cut-out cock and hose, to be tested under a pressure of not less than 70 lbs., using soapsuds for this test when weather conditions permit. All possible leakage should be eliminated. Any hose found porous or leaking around the fittings, or otherwise defective, and any cocks found leaking at the top of the key should be removed.

2. The brake cylinder must be tested for leakage with a gage attached to the retaining valve exhaust or triple valve exhaust port, and the triple valve tested with a specified testing device to determine whether it will apply and release properly in both service and emergency applications. If the triple valve fails to pass this test or the brake cylinder leakage exceeds 12 lb. per

minute, the entire brake equipment must be given the attention specified for cars requiring annual repairs when the stencil is out of date. If the triple valve and brake cylinder pass the prescribed test, the retaining valve and its pipe must be tested, and the combined leakage from the cylinder, retaining valve and retaining valve pipe must not be greater than is specified in the table on the preceding page.

3. When giving brakes this attention, see that the brake pipe is securely clamped, angle cocks in their proper position with suitable clearance (see M. C. B. Sheet 18), hose and couplings in good conditions, reservoirs and cylinders tight on their supports, the supports securely attached to car, and that piston travel is table on the preceding page.

EXHIBIT C.—ANNUAL REPAIRS TO AIR BRAKES ON FREIGHT CARS

Exhibit C follows closely the instructions for Lubricating and Inspection of Brake Cylinders as published on page 524 of the Proceedings of the Master Car Builders Association for 1918 with the following additions:

19. When the brake cylinder and triple valve are cleaned, the following additional work should be performed: Retaining valve cleaned by removing the cap, wiping or blowing out all dirt and seeing that the valve and its seat are in good condition, the retaining position exhaust port open and the valve proper well secured to the car in a vertical position; pipe clamps applied where missing, and tightened where loose, hose and angle cocks turned to their proper position. Pipe joints, hose, release valve, angle and cut-out cocks should be tested under a pressure of not less than 70 lb., using soapsuds for this test when weather conditions will permit. The retaining valve and its pipe must be tested and the combined leakage from the cylinder, retaining valve and retaining valve pipe must not be greater than is specified in the following table:

TYPE OF RETAINING VALVE	Position of Handle	Initial Cylinder Pressure	Combined leakage from the cylinder, retaining valve and pipe must not exceed that shown below. Number of pounds leakage per minute.
15 lb. Single Pressure Spring and Weighted Type.....	.....	10 lb.	5
15-30 lb. Double Pressure Weighted Type .....	.....	20 lb.	6
15-30 lb. Double Pressure Spring Type	High	20 lb.	6
25-50 lb. Double Pressure Weighted Type	Low	10 lb.	5
25-50 lb. Double Pressure Spring Type .....	.....	40 lb.	8
	.....	40 lb.	8
	.....	15 lb.	6

20. Stenciled dates on brake cylinders or auxiliaries should not be changed unless paragraphs 1 to 19, inclusive, have been complied with.

NOTE.—It has been found good practice, where conditions will permit, to install a brake cylinder packing leather test rack similar to Figs. 1 or 2, Exhibit C-1, in a suitable building close to where the brakes on cars receive attention. When such a rack is installed, the piston, when removed from the cylinder, should be taken to the rack and cleaned, lubricated and tested, in accordance with instructions for cleaning and testing these parts on cars. The expander ring should also be tested in a gage, and metal covers for protecting the leather from damage through handling should be provided.

Exhibit C-1 includes drawings of tools and test devices for use in testing and repairing air brake equipment on freight cars including a gage for brake cylinder leather expanders, protectors for brake cylinder packing leathers and brake testing devices.

Exhibit D covers the cleaning, lubricating and testing of triple valves and corresponds with the standard instructions on page 522 of the 1918 Proceedings of the Master Car Builders' Association with minor revisions and also the Triple Valve Tests and Instructions for Operating Triple Valve Test Racks shown on page 526. To this is added a section covering instructions for operating the No. 2 triple valve test rack.

The report is signed by T. L. Burton (Chairman), New York Central; B. P. Flory, New York, Ontario & Western; J. M. Henry, Pennsylvania; L. P. Streeter, Illinois Central; R. B. Rasbridge, Philadelphia & Reading; W. J. Hartman, Chicago, Rock Island & Pacific and G. H. Wood, Atchison, Topeka & Santa Fe.

T. L. Burton: There is one paragraph which does not appear in the report which the committee subsequently decided should appear and that is an acknowledgment of its indebtedness to the Air Brake Association, especially its president, Mr. Berry, for the hearty assistance and co-operation rendered the Train Brake and Signal Committee during

the current and previous years in the work which has been before that committee.

Mr. Hennessey: I move the report be accepted and referred to letter ballot.

Mr. Gaines: I would like to have the mover amend that motion, so that in printing the note on sheet 2, in the portion "double or lock nuts" the word "or" be omitted, and have it read "have lock nuts," that being the practice of the Railroad Administration at the present time.

Mr. Hennessey: I don't accept that amendment.

Mr. Fuller: We ought to have that made a little clearer. Do I understand, Mr. Gaines, that you do away with the practice of using a double nut or a single nut and a lock nut, and go to some so-called nut that takes the place of both—is that your idea?

Mr. Gaines: That is not our idea. The practice of using double nuts has been generally discontinued in preference to using a nut and a lock nut. That is what I wish to convey; instead of leaving it optional whether you were going to use double nuts or a nut and a lock nut, that you make the nut a lock nut mandatory as being the better practice.

Mr. Hennessey: If that is the idea, I will accept the motion that way.

Mr. Fuller: I don't understand that.

Mr. Gaines: Do you want to use two nuts or a nut and a lock nut? What is the better practice?

Mr. Fuller: What is your motion?

Mr. Gaines: My motion was to omit the double nut and just make it a nut and a lock nut.

Mr. Fuller: I don't think there is any particular objection to that, but it is rather revolutionary. I don't believe the time is ripe to put into a rule something that you can't do and won't do. I believe that the recommendation should say "a nut and a lock nut is preferable," but to prohibit the double nutting out in the woods is going so far that we won't be able to accomplish it to-day.

Mr. Gaines: In reply to Mr. Fuller, I don't think that if you were out in the woods, and had to put a double nut on, there is anything that will prohibit you doing it; but I think it is wrong to specify double nuts as being better than a nut and lock nut.

Mr. Fuller: What is the use making rules here that we know people will not obey. That is just our trouble. We make rules and go home and don't obey them, and won't do it.

Mr. Gaines: We don't make it mandatory by doing that, but you give the preference to the best practice. On new equipment I think we should start out with a nut and a lock nut.

Mr. Fuller: I am trying to make the rule consistent, and if I understand your motion, it makes the proper repairs a nut and a lock nut, and it is improper repairs if two nuts are used.

Mr. Burton: I believe that the committee can add a word or two that will make it entirely satisfactory to those who have participated in the discussion so far. Mr. Fuller has stated that they thought, that so far as getting results was concerned, either method would be satisfactory, probably the lock nut more desirable than the other; but we did not feel like going so far as to specify lock nuts instead of double nuts. My suggestion is that the last sentence on the proposed note be revised to read that the committee's recommendation will, therefore, include the revision of Sheets 18 to include double or lock nuts, preferably the latter.

Mr. Fuller: I will accept that.

Mr. Burton: I think the committee will do that without a motion.

Mr. Hennessey: I will accept that.

Mr. Goodnow: Before the motion is put, it seems to me they have omitted one item from their letter ballot which should be included, and that is the matter of stenciling referred to on the bottom of page 3, because that will mean a change in the present standards, and it should be recommended.

Mr. Burton: It is shown here as a part of the proposed revised instructions on the maintenance of freight brakes, of which that stenciling would be a part, and reference should perhaps have been made to the fact. I just noticed from reading the report of the Committee on Standards that this proposed stenciling seemed to agree with what they proposed, and if you adopt the standard practice on the automatic air brakes, you automatically adopt the form of stenciling.

H. W. Watkins (S. P.): There is nothing in this report that provides for the draining of reservoirs and the stenciling of them. We find that our reservoirs contain a considerable amount of water; condensation and corrosion get back into the valve and cause trouble, and I believe that the reservoirs should be drained out at the time the cylinder and the triple valve are cleaned, and so stenciled. I think this committee should include that in their report.

Mr. Burton: The condition referred to is largely a local one, and I doubt the necessity of providing specific instructions on draining auxiliary reservoirs on freight cars for the purpose of removing moisture and stenciling them to cover. You understand this is a freight car proposition exclusively. If that should be necessary, why then I would say that the thing to consider is putting the bleed cock in the bottom of the reservoir where it is drained every time it is used, but I think the protection afforded by having the relief valve at the top offsets any advantages of having the drain cock at the bottom.

Mr. Watkins: When we first put the automatic brakes on our equipment, there was a bleed cock put in for that very purpose, but it was abandoned, and a plug was put in, and that plug is never removed. The result is that water and condensation is carried around in these reservoirs for years, and there is corrosion. It is just as important to have your reservoirs cleaned as it is the cylinders for a perfect brake.

Mr. Burton: Why not request some committee to consider that in connection with this other work?

Chairman: That will have to come up after this first motion is disposed of. I will dispose of the first motion and then you can make your motion.

The motion was put and carried.

Mr. Watkins: I move that the question of draining and stenciling reservoirs be considered by the committee for next year.

Mr. Gaines: I second the motion.

The motion was then put to vote, and lost.

H. M. Curry (N. P.): I speak on this motion as the author of it. I think it is very essential this should be done if you leave off the stenciling end of it. I don't think we ought to leave the matter as it now stands, because we in the northern country have had considerable trouble with water in the air brake apparatus. I don't think we ought to let it rest this year.

Chairman: If I were in the northern country, or in the country where these things seemed necessary, and the head of a railroad, I would see that the proper instructions were issued, so that my men would take care of these particular things that gave us annoyance, and I believe that is the proper way to do.

Mr. Curry: This is one point that you apparently overlook. These cars may come from the South to the North, and we have encountered considerable trouble on that account.

Chairman: The first time they reach your rails they can be drained.

Mr. Curry: That is all right. When they reach our rails there is a whole lot of drainage; we find it necessary. You are putting the practical burden on the Northern Pacific and the Northern roads, of taking care of all the work to drain the cars that come to our country.

Chairman: I believe that that thing will adjust itself. There is some other section than the North that has to do a lot of things you don't have to do.

Mr. Fuller: I make the motion.

Report on Brake Shoe and Brake Beam Equipment



B. B. Milner
Chairman

THE COMMITTEE MET in Chicago on April 22, confronted by a rather peculiar situation. By letter ballot of 1917, the "No. 2 Brake Beam," shown on Sheet R of that year, had been adopted as recommended practice, but by a close margin. This "No. 2 Brake Beam" was not a complete beam, certain details having been omitted in order to save it from being lost as were its predecessors in the letter ballots of 1912, 1913, 1914 and 1916. In 1918, a completely detailed beam, built upon the results of the 1917 letter ballot, appeared among the M. C. B. Standard Sheets as the result of

special Executive Committee action suggested in connection with the car equipment built by the Railroad Administration, it being evidently thought that a beam supposedly used on the 100,000 administration cars would be fit for adoption and that such large initial use of a beam would be a favorable beginning for any standard.

On account of the generally unsatisfactory situation, which has obtained in connection with the committee's work, particularly with regard to the adoption of a standard No. 2 Beam, it was the opinion of the committee that the difficulties or objections which have beset its work and have operated to keep the committee from making the desired contribution to the advancement in the state of the art, should be reviewed for your information and for the benefit of the committee in planning for its future work.

In addressing itself to the brake beam and brake shoe problem of the country, the committee has not benefited by an adequate knowledge of the brake beam conditions of the country. It should appear impractical to divorce new equipment design from the maintenance of old as well as the maintenance of new, or to attempt to treat new and old equipment entirely indepen-

dently, one of the other. Yet that appears to have been virtually attempted. Without knowledge of the country's brake beam conditions, the committee has, in the past, submitted to you for adoption, a beam which, on account of lack of adequate clearance between the spring plank and wheels, could not be applied to, many thousands of cars. The committee is now, through the medium of a questionnaire, collecting from all the roads, brake

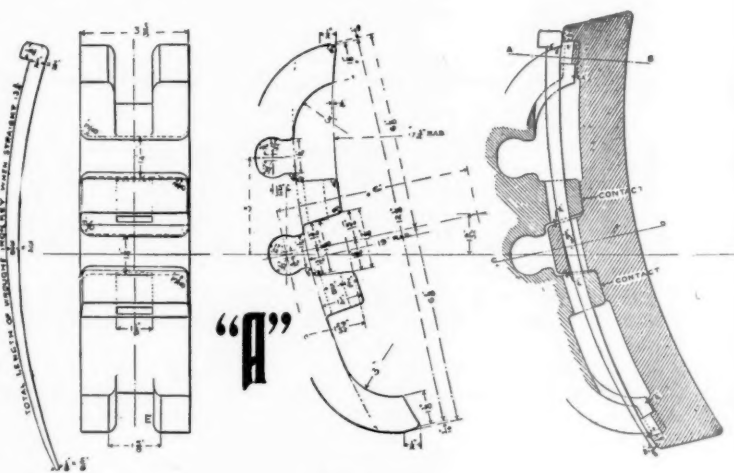


Fig. 1

beam information essential for passing judgment upon brake beam problems.

Large numbers of dimensions shown upon drawings submitted for adoption, and in some cases, adopted, have caused dissension with some, and, with others, confusion because of an attempted use or interpretation not clearly intended by the committee or specifically contemplated by some of the members in casting their letter ballots. For example, in the 1917 Proceedings, page 394, the statement is made that "The committee recommends a revision of the present face of contour shown on Sheet M. C. B. 17, including the contract of the shoe to the head in the revised contour of the head . . . it being understood that only the contour lines of the head, where the shoe is in

contact with the head, are under consideration," introductory to question 81, "Do you approve of the above recommendation?"

A comparison of the 1916 brake head drawing identified as A upon Fig. 1 of this report and the brake head drawing which action upon the above question gave place in the standards as shown by Fig. 2, will justify and reflect, very apparently, the cause for the dissension and confusion referred to, notwithstanding the following note which the 1917 Sheet 17 bore—"Dimensions affecting contour, lugs and slots only are standard. Other dimensions for information only." The present committee submits that such notes are very likely to be overlooked and that text in the report or explanations of the meaning of letter ballots qualifying the significance of information, particularly dimension information, on Standard and Recommended

rails to the center of the face of new shoes, were adopted in 1894, as follows: for inside hung beams, 13 in.; for outside hung beams, 14½ in., but has never appeared upon any of the Standard or Recommended Practice Drawings.

Failure to exhibit this dimension upon the drawings has, it is believed, contributed to some further confusion which the 1917 letter ballot action unwittingly occasioned. Upon the brake head drawing A of 1913, 1914, 1915 and 1916 Standard Sheets, Fig. 1, the (unmarked) radial line drawn from the wheel center intersects the horizontal (unmarked) center line of the strut at a point which is the center of the center loop hanger opening. This same situation has obtained and has been generally used since before introduction to the Standard and Recommended Practice Sheets in 1907. Note, however, that upon

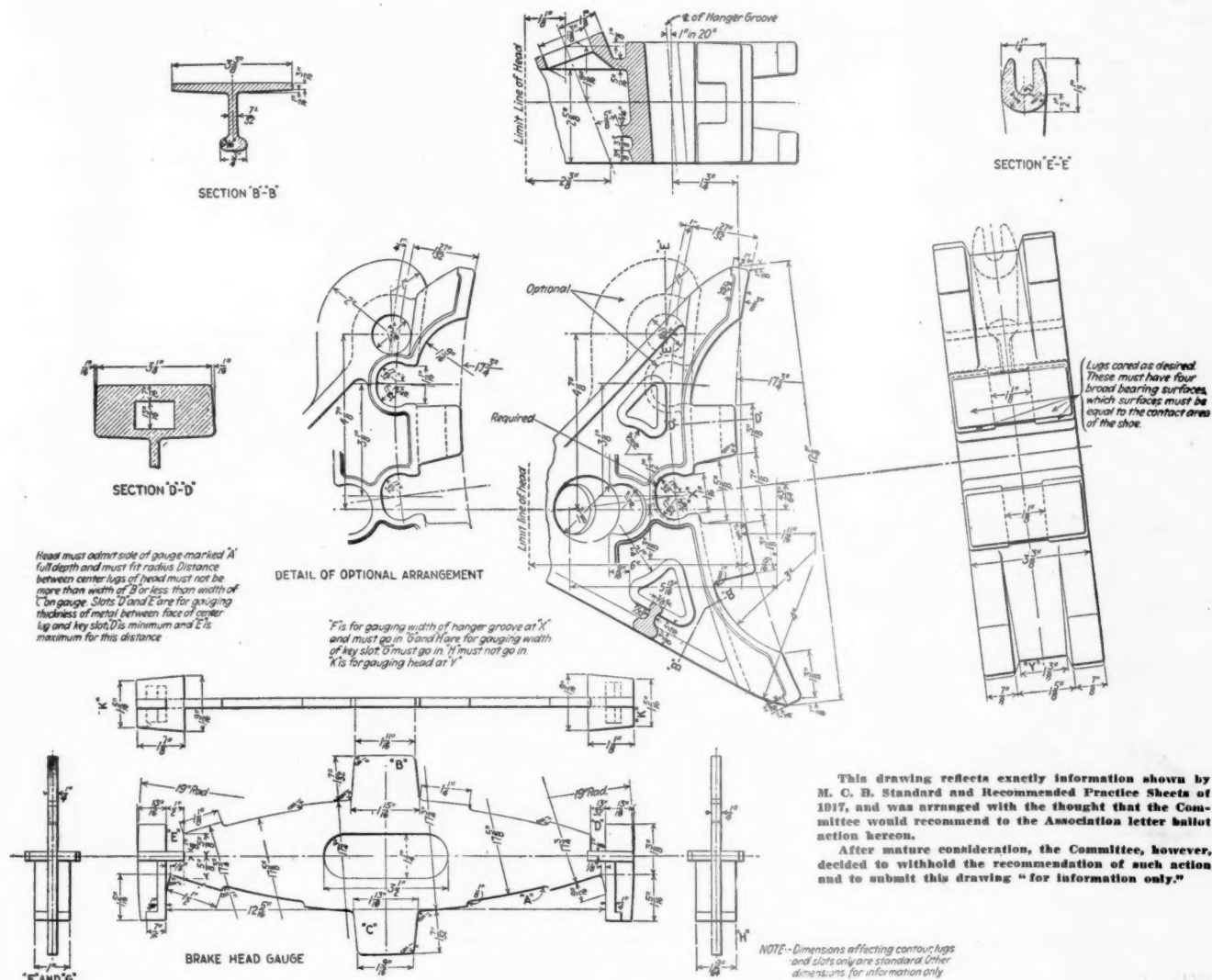


Fig. 2

Practice Sheets, is even more apt to confuse. All that was said on this matter in the body of the report of that year was "... the committee has strengthened the head design as well as the bearing surface of the head to the shoe and eliminated the ¼-in. offset between the two center lugs of the head and the outside lugs where they engage the ends of the shoe." This very meagerly covers what the drawings reflect.

Again, while unauthorized dimensions or dimensions which had not specifically received formal approval, occasioned dissension and confusion through finding place upon Standard and Recommended Practice Sheets, it is suggested that the service has suffered because some dimensions which have been formally approved, have never appeared in the drawings. One, very important, has appeared each year for years in the text of the Standard and Recommended Practices as follows: "Standard heights of brake beams, when measured from the tops of the

what was adopted in 1917 (Fig. 2, this report), this radial line intersects the horizontal referred to, at a point much farther back and that the center of the center loop hanger opening remaining upon it (the radial line), is raised very significantly, although these facts were not referred to, much less explained, in the 1917 report or in the letter ballot circular of that year.

Such a situation would be positively obviated by adopting, either directly or indirectly, but clearly represented upon drawings, a process of laying out brake heads and brake beams such as the accompanying Fig. 3 presents. This one has been in most general use among manufacturers for years, being their interpretation of what found place in the Standard and Recommended Practices in 1907 and remained unchanged until 1917. The committee is on the point of soliciting from the representative members, statements of any reasons for not adopting the procedure which Fig. 3 would clearly fix, with any proposed

suggested plans, and hopes to recommend for adoption next year some such fundamental and basic procedure, the importance of which is reflected by Fig. 4, which presents a cut resulting from superimposing upon one of the many heads received upon the administration cars in accordance with the plan of layout antedating 1917, the one head furnished in accordance with the 1917-18 layout.

The committee is not, and probably will not be, for some time, in position to recommend for adoption a "Standard Beam," that is, a beam having all of its detailed dimensions duly standardized, but plans to include in its reports, beams and parts thereof fully dimensioned for the benefit of any who may be concerned in such information, and to arrange for adoption next year, from the 1917 Standard and Recommended Prac-

enter upon the committee work independent of the operation of any such impending factors, contributing to the fullest their individual engineering judgment, skill, experience, etc., to the solution of the country's brake beam and brake shoe problems.

The committee plans to arrange adequate trial of the gages shown in this report and other gages which the committee's canvass of the representative members brings forth, and so ultimately recommend adopting the best of the lot.

The committee finds approximately four pages in the text of the Standard and Recommended Practices devoted to brake shoes and beams, all of which is or could be advantageously represented on Standard or Recommended Practice drawings, and contemplates recommending, with the adoption of New Standard and Recommended Practice drawings next year, that the association

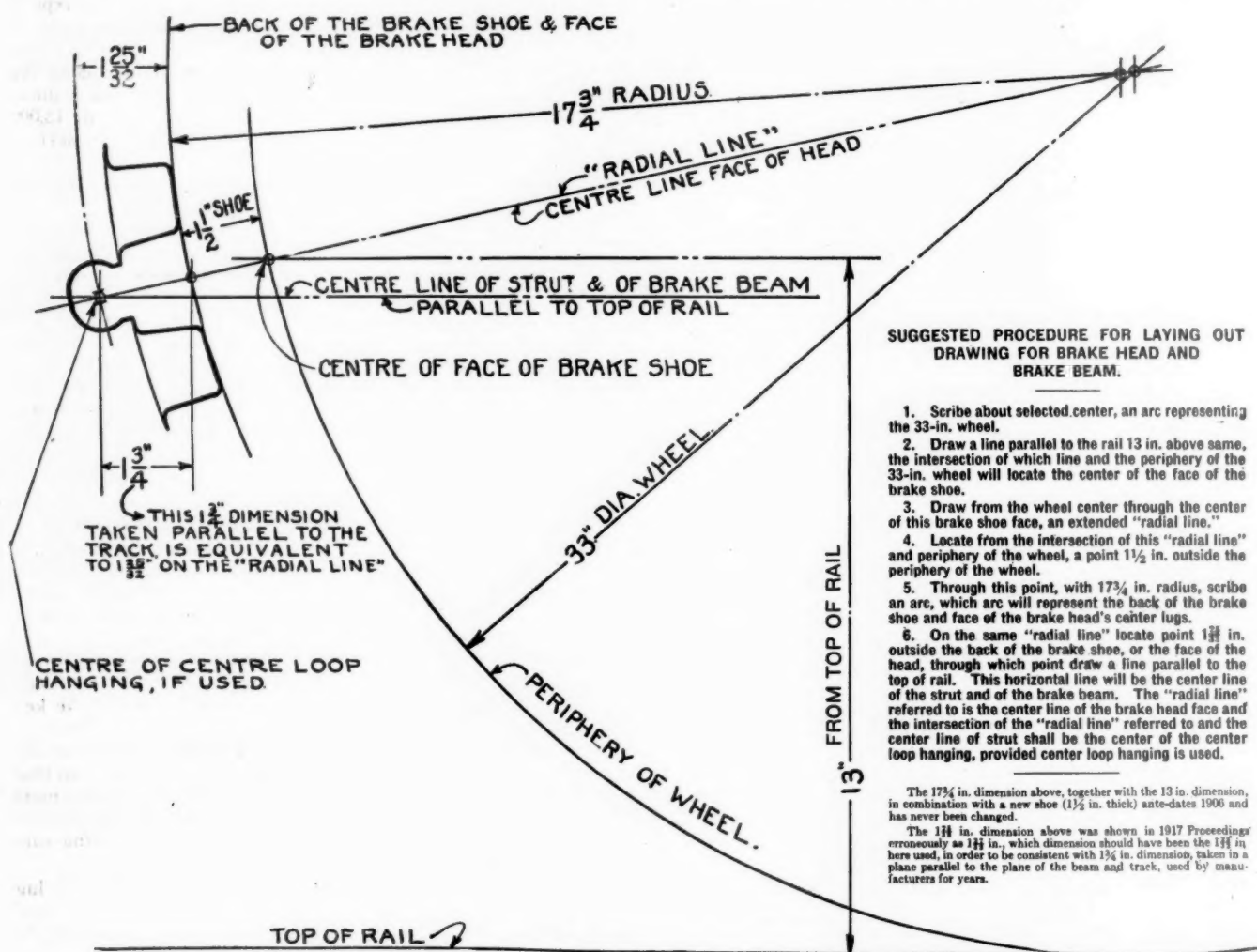


Fig. 3

tices and from whatever of the questions referred to in this report the committee may be able to decide and agree upon, drawings exhibiting those dimensions only which have had definite approval. The committee will then assume to recommend for formal adoption dimensions missing from the Standard and Recommended Practice Sheets, just as rapidly as the committee's judgment will support and warrant.

This committee has not, in the past, benefited by reason of much constructive criticism. In order to make progress, the committee should, at least, benefit by the reasons for a negative ballot, if definitely constructive criticism can not be furnished.

We have heard from time to time in the past of the representatives of some roads trying to force matters, others being on the defensive either on account of pending damage to them, or of simply a disinclination to change anything, and then, too, of the selfish influence of manufacturers' interests. It is the belief of the present committee, that each of its members should

approve eliminating from the Standard and Recommended Practice text all unnecessary duplication, reducing it to very little more than specifications for Brake Shoes and for Brake Beams.

The committee proposes to solicit from the exponents of various views on disputed questions, written argument sustaining their respective positions. During the current year, the matter of prescribing the process of laying out, upon the drawing board, a standard brake head and beam, previously referred to in the text and Fig. 3, will be so pursued, and the association may anticipate our recommending action on the matter next year. Another question which will, in all probability, be similarly handled, but later, is that of brake beam hanging arrangement. We anticipate it will be sometime before one hanging can be made standard to the exclusion of other arrangements. On these accounts, the committee plans to, just as far as possible, forecast, in its reports, the work which it sees ahead and to, just as soon as possible, indicate, subjects which are or will be in the way of being placed before the association for letter ballot action. Prin-

ciples or subjects may then occupy several consecutive stages in some such order as follows: (1) mention in report, (2) study, (3) approval of the principle involved, (4) suggestion or recommendation of trial, (5) Recommended Practice, under which it may be said that no mistake is made in applying the principle, and (6) Standard Practice, in which stage the principle should be used, maintenance practices should be in the direction of applying the principle or should at least be consistent therewith, and a new car is not a car without it.

The committee is of the opinion that its work and the work undertaken for it which has been reported in the Proceedings, should be classified and indexed so that any part of the history of the subject should be immediately available to any one interested therein. Such an index we propose to arrange as a part of our next year's report.

Likewise, the committee is considering the advisability of presenting next year a report on the "state of the art," both as regards brake beams and brake shoes, the latter being now suggested because of the following quoted from the 1917 report, page 155 of the Proceedings of that year: In its Circular of

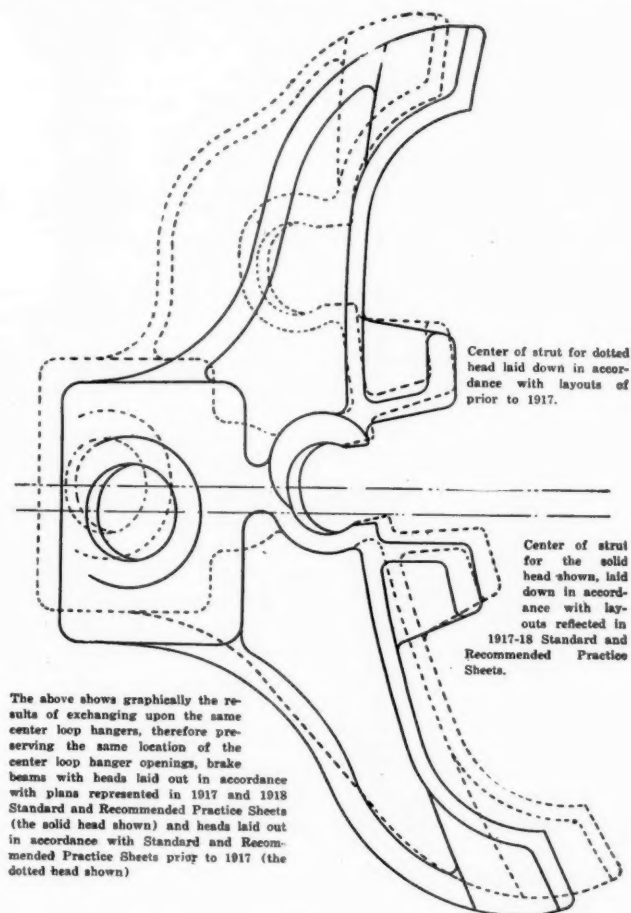


Fig. 4

Inquiry, the committee requested the members to furnish designs of steel back brake shoes which they were manufacturing and to advise if they were free from patents. The replies indicate that such forms of steel back brake shoes as are being manufactured by the members and which would be acceptable as Recommended Practice of the association are not free from patents, and probably will not be until 1919; that one of the members is using a steel back brake shoe of his own manufacture which is free from patents, but this design does not incorporate carrying the steel back reinforcement around the key lug. The committee therefore feels that until the above mentioned date it can not offer to the association as Recommended Practice any design of steel back brake shoe which would be free from infringing any valid existing patents."

(The committee submitted with the report several plates showing information incorporated in the standards from 1906 to 1916 and called attention to the successive changes.

Two other plates showed 12 different designs of brake heads which were applied to the order of 100,000 cars for the Railroad Administration.)

Considering the many things obviously wrong or subject to criticism in the Standard Sheets of 1918, particularly in view of the additions and changes represented therein which had never been before the committee, the fact that the Standard Sheets of 1917 were accepted by letter ballot, although by a very close vote the impossibility of the committee's being able to present a recommended decision on many of the disputed questions in the time available after its organization for this year's work, and prevalent criticism directed to the arrangement of the Standard Sheets and their illegibility on account of the smallness of the drawings and dimensions, the committee decided upon presenting a rearrangement of the 1917 sheets to larger scale.

Aside from the difficulties already referred to in this report, the committee will address itself to the following questions or suggestions, with the hope that upon some of them conclusive report may be made next year: The question of increasing the No. 2 Beam capacity from 12,000 to 15,000 lb., and the counter suggestion that a new beam, No. 2½, with a capacity of 15,000 lb., to be recognized among the Standards, comes from several members.

A member suggests that full recognition be given the top hanger opening.

Dimension and details upon compression and tension members.

A member suggests covering of various types and locations of third point suspension lug, and that the hole in this lug should be $1\frac{3}{16}$ in. for a $\frac{3}{4}$ -in. pin, in lieu of the larger pin shown on the present strut drawing.

It is suggested that the strut should be dimensioned to show the minimum distance from the pin hole to the ends of the slot; that the chamber in the compression member should be "not less than $\frac{3}{4}$ in.," instead of $\frac{7}{8}$ in. The strut and compression member fastening with key is objected to, together with the use of nuts on the ends of compression members, it being believed that these arrangements might be replaced by better ones.

Some believe that the vertical dimension between the centers of the loop hanger opening should be restored from $3\frac{1}{2}$ in. to 3 in.; that the width of the center head lugs be reduced from $1\frac{3}{8}$ in. to $1\frac{1}{4}$ in.; that the upper pot hook hanger hole should be $1\frac{3}{4}$ in. above the center line of the upper loop hanger opening, and that the cross section of metal in the pot hook hanger opening should be changed to a single ribbed style.

Some believe that the $\frac{1}{16}$ -in. clearance back from the $17\frac{3}{4}$ -in. radial line on the top and bottom head toes should be restored; that the width of opening in the brake head for the brake key should be shown as "not less than $\frac{5}{8}$ in. instead of $1\frac{3}{16}$ in.; that the length of the face of the head lug shown precisely as $3\frac{1}{4}$ in. should be replaced by a minimum dimension, say 3 in., and that the head lug note reading "Lugs cored as desired. These must have four broad bearing surfaces, etc.," should be changed to "Lugs cored as desired. These must have four full bearing surfaces, etc."

A member suggests that the width at the base of the tie lug openings should be re-established from $1\frac{3}{8}$ in. to $1\frac{1}{4}$ in., and the head gage changed accordingly; that $\frac{5}{32}$ -in. radius should be added to the adjacent corners on the head gage; that the $\frac{1}{8}$ -in. radius at the bottom of the B and C head lug opening should be made $\frac{3}{32}$ in. instead of $\frac{1}{8}$ in., because, otherwise, the gage will not "bottom" in the head. It is further suggested that the brake beam outline and salient dimensions thereof should be inserted inside of the limiting outline drawing, together with interchange dimensions, that is, angle of strut, spacing between shoes, etc., and that the $19\frac{1}{4}$ -in. maximum width of limiting outline opening should be extended to within $1\frac{1}{16}$ in. of the end of such opening.

A member suggests that the A and B openings of the brake shoe gage should be changed from $1\frac{1}{4}$ in. to $1\frac{1}{32}$ in.; that the base of these openings should be a radius of $18\frac{3}{32}$ in., in lieu of 19 in., and that strut markings should be changed from the rear to the front end of the strut, because of being, in that location, more easily seen.

It is also suggested that the "outside beam hanging $14\frac{1}{2}$ in." should be eliminated; that

"Center of Brake Shoes 60 in." should be changed to "center to center of face of brake heads 60 in. on the plane of the strut center," and that the center of the third point suspension should

be specified as $10\frac{1}{16}$ in. from the center of the face of the head.

The committee carefully considered the advisability of suggesting letter ballot action on the question of substitutes in Standards for present 1918 sheets 17, 17-A and 17-B of this report, but finally concluded that the 1918 sheets referred to might as well stand during the coming year, it being understood that the committee anticipates recommending replacement thereof by appropriate letter ballot action in 1920.

The report is signed by B. B. Milner, Chairman, New York Central; Prof. Chas. H. Benjamin, Purdue University; T. L. Burton, New York Central; C. B. Young, United States Railroad Administration; H. K. Fox, Chicago, Milwaukee & St. Paul; G. H. Gilman, Northern Pacific; T. J. Burns, Michigan Central, F. M. Waring, Pennsylvania.

E. B. Milner: The committee assumes to submit this report as a progress report, and requests an extension of time covering the next year, in which to consider and report to you if possible definitely upon many questions which this report indicates as requiring time for further study.

C. F. Giles: I move that the report be received and the committee continued to report at the next meeting.

The motion was carried.

The meeting then adjourned until 3 P. M.

The Afternoon Session

The proceedings of the afternoon session which took up the consideration of reports of the Committees on Arbitration, Revision of Prices for Labor and Material, Depreciation for Freight Cars and Revision of Passenger Car Rules of Interchange will be published in to-morrow's issue.

Apologies to the Camel Company

P RINT SHOP SURGERY amputated a line from the items included in the exhibit list statement made for the Camel Company yesterday. By this operation W. W. Darrow, A. B. Wegener, Arthur Allen and Belden D. Jones, of that company, were omitted from the names of those attending. The spaces of the company also were given incorrectly. The correct spaces are 534-536.

Canadian Delegates Missed From Convention

T HE DEADLOCK between the Canadian Railway War Board and Division No. 4, Railway Shopmen of America, has made it necessary for all of the mechanical officers on the Canadian roads to remain on their jobs. They will be greatly missed because they have been a most important factor in all of the conventions which have been held during recent years.

The following are the most important demands made by the employees' committee:

1. Increases in rates for helpers from 45 cents per hour to 70 cents; for the machinists, blacksmiths, carpenters and similar tradesmen, ranging from 53 to 68 cents per hour, to 85 cents.
2. Forty-four-hour week as compared with forty-eight hours now in vogue in round houses and operating yards and forty-seven hours in main shops.
3. Double time for overtime in place of time and one-half.
4. Thirty days' holiday with full pay each year.
5. Extended issuance of annual free transportation.

Upon some of the foregoing and on a number of minor points the board has already made concessions. The employees have been informed that an eight-hour day has been granted, with Saturday afternoon holiday, where that privilege is already enjoyed, and the payment

of punitive overtime for work performed on Saturday afternoon, where provided for in existing agreements.

Other points, however, are involved gravely affecting not only the solvency of Canadian railways, but the ability of Canadian business concerns to meet foreign competition. The board has declined to conclude negotiations or to give definite assurances except and until the same points in negotiation by the main branch of the same labor organization, constituting 90 per cent of its membership, with the United States Railroad Administration in Washington have been announced.

The Track Exhibits

T HE large number of track exhibits this year has required that practically every available track be occupied, and of necessity the exhibits are somewhat scattered. The following is a list of the exhibits and the tracks on which they will be found:

Pennsylvania Cars

Three cars are being exhibited this year by the Pennsylvania Railroad, a 105-ton hopper car, a 110-ton gondola and a general utility express and baggage car. These cars are located south of the pier entrance, on Georgia Avenue, near the Boardwalk.

The Locomotives

Three locomotives are on exhibit, one a powerful electric freight locomotive, built by the Pennsylvania Railroad and the Westinghouse Electric & Manufacturing Company, a simple Mallet locomotive, just completed at the Juniata shops of the Pennsylvania Railroad, and the class I is Decapod locomotive, the first of which was built by this road about two years ago. These three locomotives are located on track 5 of the Pennsylvania electric train station at Tennessee Avenue. Bus service between the hours of 2.30 and 4.30 P. M. will be maintained by the Westinghouse Company between the Boardwalk and the Tennessee avenue station for the benefit of those who wish to visit the locomotive exhibit. The busses will make frequent trips, starting from Arkansas Avenue at the Boardwalk, just in front of the pier entrance.

The Army Ordnance Exhibit

The American Car & Foundry Company has on exhibit at Mississippi Avenue four heavy railway gun mounts. These are a 14-in. army rifle, a 7-in. rifle, a 12-in. mortar, an 8-in. rifle and an armored ammunition car for railway artillery.

In addition to the track exhibit, the American Car & Foundry Company also has a number of field artillery pieces, which are being exhibited near the Boardwalk, between the Marlborough-Blenheim and the Brighton hotels.

A Four-Wheel Drive Automobile

The Four-Wheel Drive Auto Company, Clintonville, Wis., has on exhibit, on Mississippi Avenue, a three-ton truck with four-wheel drive, used by the Army for handling ammunition.

Self-Propelled Cars

The storage battery cars, being exhibited by the Railway Storage Battery Car Company, and in operation between Atlantic City and Ocean City, leaves the Boardwalk on Virginia Avenue, at 10 A. M. and 3 P. M. daily. The round trip requires one hour and forty minutes.

The steam-driven car, exhibited by the Unit Railway Car Company, is located on Mississippi Avenue.

The Naval Ordnance Exhibit

The Baldwin Locomotive Works is exhibiting, on the Georgia Avenue tracks, a 14-in. railway gun mount and a 7-in. caterpillar gun mount, built for the United States Navy.

R. S. M. A. Nominations

THE Nomination Committee of the Railway Supply Manufacturers' Association has nominated as president W. S. Bartholomew, president of the Locomotive Stoker Company, and vice-president of the Westinghouse Air Brake Company. It has nominated as vice-president J. F. Schurch, of the T. H. Symington Company. Mr. Schurch has been located at Rochester, N. Y., but expects shortly to remove to Chicago.

Registration, American Railway Association, Sec. III, Mechanical

Ayers, A. R., S. M. P., N. Y. C. & St. L., Marlborough.
 Boyer, Chas. E., C. C. I., Penna., Runnymede.
 Brogan, Jas. P., Asst. M. C. B., D. L. & W., Blackstone.
 Brown, M. C., M. M., South Georgia, Haddon Hall.
 Carroll, W. P., Genl. Supt., E. B. & A. C. Whiting Co., Schlitz.
 Dickson, J., S. M. P., S. P. & S., Ambassador.
 Duffy, A. F., Mgr. Safety Section, U. S. R. R. A., Blackstone.
 Durham, Geo. S. M. P., W. L. E., Strand.
 Frye, A. D., Piedmont & Northern, Strand.
 Gibbs, A. W., C. M. E., P., Chelsea.
 Gillis, H. A., Seaside.
 Corell, W. T., Monticello.
 Grewe, H. F., M. M., Pitts & West Va.
 Hainen, J., Staff Officer Mech., V. & S.
 Hartley, Geo. B., Solvay Process Co., St. Charles.
 Henry, J. M., A. G. S. M. P., Penna., Chelsea.
 Irvine, William, M. M., U. P., Haddon Hall.
 Kiesel, W. F., Jr., N. E., Penna., Chelsea.
 Kilroy, P. M., M. C. B., St. L. & S. W., Breakers.
 Klinefeld, R. B., F. C. R., Newburgh & South Shore, Seville.
 Kneass, Strickland L., Wm. Shellers Co., Ltd., Chalfonte.
 Knox, W. J., M. E., B. R. & P., Arlington.
 Lavallee, J. L., Mech. Supt., Strand.
 McConville, H. A., I. F. C. R., L. & N.
 McIlvaine, C. L., S. M. P., P., Chalfonte.
 May, Walter, M. M., C. C. C. & St. L., Chalfonte.
 Mercur, R. E., T. M., Westmoreland Coal Co., Seaside.
 Miller, R. S., M. C. B., N. Y. C. & St. L., Traymore.
 Needham, E. F., S. L. & C. D., Wabash, Alamac.
 O'Neil, W. J., M. Supt., C. R. I. & P., Breakers.
 Pardue, W. T., M. C. B., Seaboard Air Line, Haddon Hall.
 Peiffer, Chas. E., Master Car Building, B. R. & P., Arlington.
 Ralston, J. A., M. E., Union, Marlborough.
 Sasser, J. W., S. M. P., N. S., Chelsea.
 Sitterly, W. H., G. C. I., P., New Clarion.
 Smith, C. B., M. E., B. & M., Chelsea.
 Stork, W. A., F. C. R., L. V., Regent.
 Taylor, F. C., G. C. I., P. B. & W., Berkshire Inn.
 Thomas, F. H., V. P. & G. M., Bellefonte Cent., Craig Hall.
 Thomas, R. V., S. M., Tex., Okla. & East., De Villa.
 Turner, John A., M. M., C. St. P. M. & O.
 Van Slyck, Frank, G. M., Fairport Painesville & East., St. Charles.
 Wallis, J. T., G. S. M. P., Penna., Chelsea.
 Way, E. S., S. E., Gen. Amer. Tank Car Corp., Haddon Hall.
 Weight, G. C., G. C. I., P., Berkshire Inn.
 Weiler, G. S., G. C. F., G. C. & S. F.
 Werst, C. W., Baldwin Loco. Works, Marlborough.
 Wieseckel, G. F., S. M. E., W. Md., Dennis.

Special Guests

Allen, Edgar O., Supr. Car Repairs, Kas. Okla. & Texas, Arlington.
 Allen, Edgar O., Jr., Supr. Car Repairs, Kas. Okla. & Texas, Arlington.
 Anderson, C. M., Reg. Supr. of Safety, U. S. R. R. A., Blackstone.
 Belk, M. S., Gen. Air Brake Insp., S., Arlington.
 Beyer, F. A., Supt. of Shops, Frisco & M. K. & T., Osborne.
 Butler, T. F. M. M., P., Craig Hall.
 Burns, R. C., Chief Air Brake & Steam Heating Insp., P. East, Haddon Hall.
 Calmbach, G. M., Supr. of Welding, K. C. S., Traymore.
 Clewell, C. W., Asst. Equip. Agent, Penna.
 Col, T. W., M. M., N. P., Ambassador.
 Coulter, A. F., Gen. Car Fore., Union, Channell.
 Darden, C. M., M. E., N. C. & St. L., Breakers.
 Diehl, W. T., Gen. Storekeeper, M. & O.
 Duncan, J. N., M. M., F. D. D. M. & S.
 Durham, Edwin, S. M. P., W. & L. E., Strand.
 Femino, Alexander, Car Repairman, W. J. & S.
 Ferrier, N. A., Supr. Shop Mach., N. Y. C., Haddon Hall.
 Flinn, R. M., M. M., P. West, Craig Hall.
 Graham, A. A., M. M., F. W. & R. G., Osborne.
 Gregg, C. W., Supr. of Safety, U. S. R. A., Blackstone.
 Groten, N. N., Russ. Miss. of Ways of Commun., Terminal.
 Heiser, H. F., C. C. S. M. P., So. B., Pennhurst.
 Hinger, A. W., For. Mgr., Baldwin Loco. Works, Marlborough.
 Kirkendall, Arthur, Reg. Supr. of Safety, U. S. R. A., Blackstone.
 Klingel, W. C., Car Repairer, W. J. & S.
 Lundberg, C. H., Supt. Car Plant, Santa Fe, Blenheim.
 Martin, William, Supr. of Equip., U. S. R. R. A., Breakers.
 Mercur, Henry, Westmoreland Coal Co., Seaside.
 Needham, H. S., M. M., P., Seaside.
 Morris, Wm. W., Asst. to Dir. of Pur., U. S. R. A., Galen Hall.
 Oelkers, A. H., Asst. Supt., S. P.
 Owens, R. H., M. C. B., Cosden & Co., Breakers.
 Pape, W. Howard, Mech. Supt., Cosden & Co., Breakers.
 Parker, W. V., Gang Leader, W. J. & S.
 Peters, R. F., M. E., St. L. & San Fr., Traymore.
 Puckett, J. W., Gen. For. Car Repairs, S., Arlington.
 Ramsdell, T. M., Jr., O. W. R. R. & Nav. Co., Traymore.
 Richman, John, C. C. I., Penna. Lines, Craig Hall.
 Riggs, J. R., M. M., Penna. Lines, Osborne.
 See, P. V., M. M., H. & M., Pennhurst.
 Schaller, Frederick, Gen. Air Brake Insp., P., Haddon Hall.
 Scott, C. E., P. A., St. L. & S. F. & M. K. & T., Marlborough.
 Shreeman, M., G. F., South Buffalo, Pennhurst.
 Smith, E. S., Asst. M. C. B., F. E. C., Osborne.
 Stokes, Willard N., Adv. Depart., P & R., Strand.
 Stoll, W. J., C. I. Ins., Pennhurst.
 Strous, C. E., M. M., L. & W. B. C.
 Suaning, B., M. E., Danish State Rwy., Marlborough.
 Timmey, H. W., Draftsman, P. & R.
 Tolley, S. J., Gen. Car For., Santa Fe, Blenheim.
 Wentzell, R. L., Car Repairman, W. J. & S.
 Willes, Howard, Clerk, A. R. A., Arlington.
 Williams, C. B., Car Repairman, W. J. & S.
 Wilt, W. L., M. P. Accountant, Penna. Lines, Dennis.
 Wink, L. R., D. W. Gen. For. Car Shop, C. & N. W., De Ville.
 Winter, P. C., M. E., C. M. & St. P., Shelburne.
 Woods, Charles K., Asst. Supt., U. S. R. R. A., St. Charles.
 Yeager, J. P., Gen. Car Fore., Pitts. Shaw. & Nor.
 Yorke, T. H., M. M., O. W. R. R. & N., Haddon Hall.

THE EXTENT OF THE MOVING PICTURE INDUSTRY in the United States may be judged from the fact that about 300,000 kilowatt-hours of electric current are used daily merely for moving picture machines. The investment in the machine industry alone, devoted to moving picture machines, has been estimated at \$11,000,000. Probably 5000 machines are worn out annually, and the total amount of money absorbed by the industry may be estimated at about \$500,000,000 a year.—*Machinery.*

Conventionalities

Oscar Haywood, of the Tousey Varnish Company, is accompanied to the convention by his mother, Mrs. A. W. Haywood.

G. E. Carson, district master car builder of the New York Central at Albany, is accompanied by Mrs. Carson this year. Their daughter, Virginia, was married on June 2d to M. Croisant, an attorney in Albany.

J. A. MacRae, mechanical engineer of the Minneapolis & St. Louis, is attending the convention, and from his appearance seems to have fully recovered from a serious operation last winter.

W. R. Haggert, vice-president; Samuel Bennett, Western representative of the Anchor Packing Company, are all accompanied by their wives to the convention this year. Mr. and Mrs. Haggert and Mr. and Mrs. Bennett live in Philadelphia and Mr. and Mrs. Landreth in Chicago.

Norman C. Naylor, of the Railway Steel Spring Company, who arrived from Chicago on the Special, Tuesday, will be joined here Saturday by his sister, Mrs. J. Larned Green, of New York, who will remain over Sunday. Mrs. Green has never attended the convention before.

C. C. Hall, master car builder of the Cuba Railway at Camaguey, Cuba, arrived last night and is stopping at the Francis Hotel. Mr. Hall brings the regrets of George E. Knight, superintendent motive power of the same road, who was unable to attend the conventions this year.

Mr. and Mrs. C. F. Massey, of Chicago, who have been attending the conventions of the signal associations for some years, already are here, and will stay for the signal convention, which will closely follow the mechanical convention. Mr. Massey is president of the C. F. Massey Company.

H. L. Irving and H. C. Delcher, inspectors of the Baltimore & Ohio test department at Baltimore, are at the Martinique. They have been specially delegated to report their impressions to the Test Bureau of the B. & O. on their return. Both admit that the convention will pass every known test to which it can be subjected.

John S. Lentz, master car builder of the Lehigh Valley, who has been treasurer of the Master Car Builders' Association for many years, says that his name was misspelled for the first time in his 40 years of attendance at the conventions in the registration list reported in yesterday's daily.

Among those who arrived on the special train from Chicago was W. J. Tollerton, vice-chairman of the Mechanical Section. Mr. Tollerton is stopping at the Marlborough-Blenheim, and has with him Mrs. Tollerton and his two children, Miss Frances Lee and Robert William.

Mr. and Mrs. Frank J. Lepreau and son, Frank, Jr., are this year attending their first mechanical convention. Mr. Lepreau, who is manager of railway sales of the Macbeth Evans Glass Company, Pittsburgh, has for years been identified with the Edison interests and is one of the old guard at the signal conventions. He will, of course, remain over to attend the semi-annual meeting of the Signal Division at the Breakers before returning.

Fred A. Meckert is attending the convention this year in the role of the new general manager of the Fort Pitt Spring & Manufacturing Company, Pittsburgh. Mr. Meckert was for years with the Standard Steel Works at Philadelphia, having severed that connection last March to accept his present position. He is stopping at the Shelburne.

W. P. Borland, chief of the Division of Safety of the Interstate Commerce Commission, with Mrs. Borland and a party of three, motored from Washington to Atlantic City on Tuesday to attend the convention. Mrs. Borland was so severely burned by the wind and hot sun that she was confined to her room yesterday, but will be out again today.

Captain George Hull Porter, who formerly was manager of the central district of the railroad department of the Western Electric Company, comes to the conventions this year as manager of the entire railroad department. Captain Porter was in the Signal Corps of the army during the war, and was assigned to special signal work on outpost wires.

Arthur Allen, vice-president of the Holden Company, of Montreal, Canada, is here for the convention. The Holden Company represents a number of important United States concerns in Canada, including the Camel Company, McCord & Company, the American Brake Shoe and Foundry Company, the Chicago Pneumatic Tool Company, the Pyle-National Company and the Bradford Draft Gear Company.

We regret to see our old friend, Walter B. Leach, walking with crutches, but Mr. Leach himself is very glad to be able to walk even with the aid of the crutches. On account of sickness there was a long period during the last two years when he was hardly able to get around at all. Recently, however, he has been getting better, and while he still walks with much difficulty, he hopes he is now on the road to recovery. Mr. and Mrs. Leach, who have been regular attendants at the conventions for years, arrived Monday.

The first man we saw after our early arrival in Atlantic City was John D. Hurley, president of the Independent Pneumatic Tool Company. According to custom of many years standing Mr. Hurley has a habit of getting on the ground early and making his plans for contributing to the success of the gathering. Mrs. Hurley is with him—at the Marlborough-Blenheim.

R. S. Cooper, vice-president of the company, and F. J. Passino, southeastern representative, are at the Traymore.

Major John L. Woods died in Pasadena, California, June 13. This simple announcement in the daily will be read with sincere regret by the many friends of Major Woods now in Atlantic City. Major Woods was a veteran of the Civil War. In business life he was connected in a managerial way with the Allen Paper Car Wheel Company, McKee, Fuller & Company (both corporations later on being merged into the Steel Tired Wheel Company, of New York), the Railway Steel Spring Company and the Buckeye Steel Casting Company. Major Woods leaves a widow, but no children. He was the father of the late Edwin S. Woods, president of Edwin S. Woods & Company.

Edwin B. Leigh, president of the Chicago Railway Equipment Company, arrived in Atlantic City on the opening day and registered at the Traymore. Mr. Leigh has recently been honored with the vice-presidency of the National Manufacturers' Association. C. Haines Will-

iams, vice president of "Creco," is also attending the conventions. Fred De Long and Arthur Wyman will probably not be able to be here this year. Mr. Leigh recently has written and published a pamphlet entitled "Value of Railway Plant Compared with That of Other Industry," which is an interesting contribution to the discussion of the relation of the railroad industry to general prosperity.

George E. Scott is returning to his duties as first vice-president of the American Steel Foundries. In July of 1917 he severed his business and home ties in Chicago, moved to Washington and entered actively in Red Cross service. He became assistant general manager of the American Red Cross and later its general manager. He literally worked day and night and his record of achievement is a splendid one. Now that he is again an American Steel Foundries man he is in Atlantic City, accompanied by his sister, Miss Cornelia Scott, who, by the way, has also been an earnest Red Cross worker in Washington since we entered the war.

One of the former attendants at the conventions who will be missed by many friends this year is Samuel T. Fulton. Mr. Fulton, who was vice-president of the Railway Steel Spring Company, became ill with pneumonia in the latter part of last March, at his home in New York, and died within a few days. Before going in the railway supply business Mr. Fulton was a railway man, his last railway position being assistant to the president of the Rock Island Lines. He was widely known, and nobody ever knew Sam Fulton who was not glad and proud to call him a friend.

Ethan I. Dodds motored down with his family from Central Valley, N. Y., to Atlantic City, arriving here at 3 p. m. Tuesday. He left his farm at Central Valley at 5 a. m. and made the run of 200 miles in 10 hours. At least 50 miles of the trip was through a fog and one hour was used to repair a puncture and eat lunch. Mr. Dodds is accompanied by his wife, his son, Ethan I., Jr., and his daughter, Miss Dorothy. Mr. Dodds' name, by the way, was misspelled in connection with the list of representatives of the Flannery Bolt Company in Wednesday's Daily.

Charles L. Humpton, manager of the tube mill and director of the Parkesburg Iron Company, Parkesburg, Pa., died at his home in Parkesburg on May 26 at the age of 48. Mr. Humpton was taken ill just a few days before and his trouble almost immediately developed into bronchial pneumonia. He served for many years with the Parkesburg Iron Company in various departments; for some time he was connected with the Philadelphia office, where he devoted his time to the railway trade. He was one of the old-timers at these conventions.

Frank McManamy, who has come to the conventions in past years as chief locomotive inspector of the Interstate Commerce Commission, has come this year as assistant director of the Division of Operation of the United States Railroad Administration in charge of the mechanical department. He is accompanied by Mrs. McManamy, and they arrived from their home in Washington, D. C., on Tuesday evening. To the broad view Mr. McManamy took of the desirability of holding the convention and exhibit in Atlantic City this year and of having as many mechanical officers as practicable attend, is very largely due to the great success of the convention and exhibit. Mr. McManamy expressed satisfaction yesterday both because of the size of the crowd attending the convention sessions and the magnitude and completeness of the display of railway equipment and machinery.

The first thing that Juan Romañach, locomotive superintendent of the Cuba Cane Sugar Corporation of Havana, inquired about on his arrival at the convention was, "Where's Hale?" Otis R. Hale, overdue, is superintendent of motive power of the United Railways of Havana. When last seen on Monday, Hale was reported as alive in New York. In addition to Romañach, Mr. Hale is sought by several manufacturers who have inquired for him.

Secretary John D. Conway, of the Railway Supply Manufacturers' Association, you must remember, came here long before the rest of us. He looked around Atlantic City in odd moments, and somewhere he glimpsed this placard: "TAKE A SKY TRIP OVER ATLANTIC CITY." Now, Secretary John is not a "flyer" by nature or choice. The stock market never did interest or excite him; in fact, on his travels he prefers the way freight to the "Century" and the "Broadway." But the



Secretary Conway About to Go Up in an Airplane

placard interested him, and he pondered over the vision of a real thrill in his young life. He thought of it day and night, and after he had made all arrangements for our coming and had figured out the last detail of making that splendid exhibit on the Steel Pier, he came to the conclusion that his life's work was practically ended—all but the thrill. He nearly decided definitely to give the pier and the exhibit the "once over" from above, but he might have changed his mind had he not, in an unguarded moment, told a friend of his intention. Well, the friend told the story to a friend, and soon several friends heard of the plan. Then it was all over, except the flight. Thursday, June 12, 1919, at 4 P. M., Secretary John and Lieut. Bob Shank, the hero of many hours in the air, made a beautiful "hop-off" from Aviation Field, Atlantic City, in the lieutenant's plane. Let Secretary John finish the story: "We made a beautiful start. I had no sense of leaving the ground. We ascended rapidly to a height of 3,000 feet and then flew over the city. It was a beautiful sight—an experience I will never forget. I felt perfectly safe from the very start, and enjoyed it more than I can tell you. Every man should go. It's the life."

The Man Who Saw

Don't Spit on the Matting

The Man was told that the matting on the floor in some of the booths has chameleon-like characteristics this year, due to the peculiar qualities of the coloring with which it is dyed.

Water spilled on the matting will transform it from the conventional grass green to black. Visitors, in deference to a sense of orderly color, should refrain from expectorating on the floor.

Co-operation

To The Man Who Saw them it was evident that in some way The Four in the discussion were in some manner "out of luck."

"I counted every box—six of them—none of them contained the drills."

"Well, we're in bad all right. We had better wire home for drills, or else we don't demonstrate."

"Why, there are all kinds of drills here; let's see what we can do."

The Man followed them, interested in the results. A partly emptied box of assorted twist drills invited The Four into the booth of the drill exhibitor. They told their hard luck tale and were given the drills with the admonition, "You can use all you want, but be sure to tell them whose drills you are trying to burn up."

The Light Cure

The master mechanic from Cuba complimented the electric headlight maker upon the substitution of incandescent lamp bulbs for the troublesome carbons. The headlight maker seemed pleased.

"But," added the Locomotive Man, "they have become so popular with the engineers that they will, on every possible occasion, remove the high-powered bulb from the headlight, place it in the cab, and put the smaller cab lamp in the headlight."

Overcome by curiosity, The Man asked the most natural question in the world:

"But how do you overcome this; can't you cure them of the habit?"

"Well," said the Locomotive Man, "it got so after awhile that we had to resort to extreme measures to prevent the over brilliant illumination of the comfortable cab at the expense of the front end. When we put in a new headlight bulb now, we seal the door with a car seal. If the engineer wants a new one he has to produce the old lamp and the seal."

A Forecast

The Man was interested in the latest developments in the construction of what someone has termed "the real money earner on the railroad." He wondered, as he sought the booth of the maker of locomotives what shape the tendency of design would assume under the private control of railroads, which is considered imminent. What features of standardization would remain? What innovations would be conspicuous by their absence in future design?

The builder quickly dispelled any idea The Man might entertain as to their intention of perpetuating some of the mistakes which have resulted from the headlong plunge into standardization. He admitted that perhaps some of the lessons learned during the war would be profitable—but he couldn't think of them just then.

"Take limitations," said he. "Hundreds of standardized locomotives are operating on lines to-day deprived of steam dome space because they were ordered built to a minimum clearance established by a road to which, perhaps, was allotted a small number of the standard locomotives, after all. We shall correct that, and meantime we are urging those who are so afflicted, to reconstruct these domes and give their engines dry steam."

The Man saw that the builder meant business. And he suspected that the return of the roads would signal the repeal of regulations which, under the stress of apparent urgent necessity, had imposed impractical ideas on the carriers.

A Pow-wow on the Pier

The early bird in quest of the worm had nothing on The Man. He was abroad early, and a slowly rising fog revealed the outlines of the Pier, toward whose entrance he made his way with deliberation. Just as he had passed the first three or four exhibits he glanced up. Smoke apparently arose from a booth some distance down the aisle. Where there is smoke there must be fire, he thought, and the enjoyable ease of his stroll suddenly developed into a trot. As he ran his mind quickly framed him as a possible hero—perhaps he would shine in to-morrow's Daily as The Man Who Saw and quenched a threatening blaze on the pier! Visions of congratulations increased his speed.

Anticipation is truly the joy of life; by contrast, realization pales into cold and morbid insignificance. As The Man, somewhat shy of breath, arrived at the scene of his suspected blaze he gazed upon a comfortable smokefest of no mean proportions! There were those who sat, and those who stood. Most of them inhaled cigarettes, some puffed black cigars, and two or three contributed their bits with well seasoned pipes. But all smoked furiously as the argument waxed hot and the smoke cloud grew denser.

"Why, this is the best mechanical convention ever held," escaped through the cloud to the ears of The Man who leaned against a post and fumbled for a cigarette.

"Believe me," volunteered a member, lighting another stogie, "the Railroad Administration knew what it was doing when it encouraged this show."

"You're right," said Joe, "I have attended these conventions since Hector was a pup and nothing like this was ever pulled off before—possibly, never again. Why, I remember—"

Here he was intercepted by one of the listeners with a request for "a little tobacco." One who perceived the psychological chance assumed the floor. Respectful deference was accorded the "old timer," a superintendent of motive power, who delivered a lesson born of up-hill toil against odds and the observance of a lifetime of "conventions."

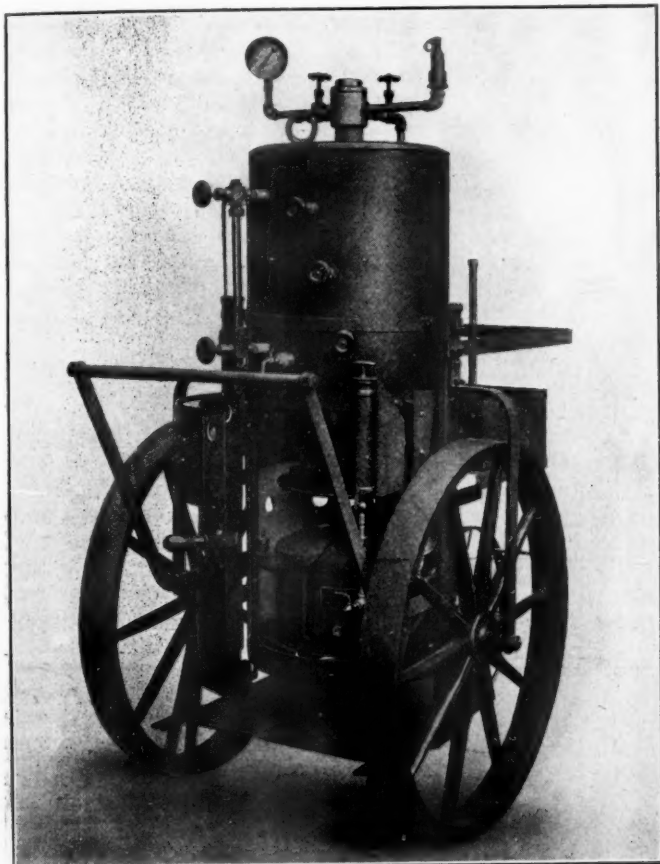
"Boys, listen to the voice of Nestor," he said. "Ten years ago I made the statement just made by Joe. I never thought that another convention would eclipse the one we saw that year—and look what has happened! Put away the pipes and let's get to work. Let's go out among these exhibits and study them. If you can't remember it all, write it down. Think of some of these things as possible solutions of your problems."

As the smoke subsided, The Man Saw. And he felt, as he quietly withdrew, that there *was* some fire behind that smoke after all; a fire of determination to make it pay; a fire of enthusiastic appreciation of the railway mechanical brains of a continent, and the far-sightedness of a nation of contributors to their welfare, stretched along the pier.

New Devices Among the Exhibits

A Portable Steam Sterilizer

THE WEST DISINFECTING COMPANY, New York, is exhibiting an improved portable steam sterilizer which is intended for use in railroad yards for sterilizing water coolers used in passenger cars and stations. The sterilizer consists of a steam boiler, a fuel tank and burners and an air pump, all substantially secured in an



The Sterilizer Mounted Ready for Use

iron frame work mounted on heavy wooden wheels and using kerosene vaporized under air pressure as fuel.

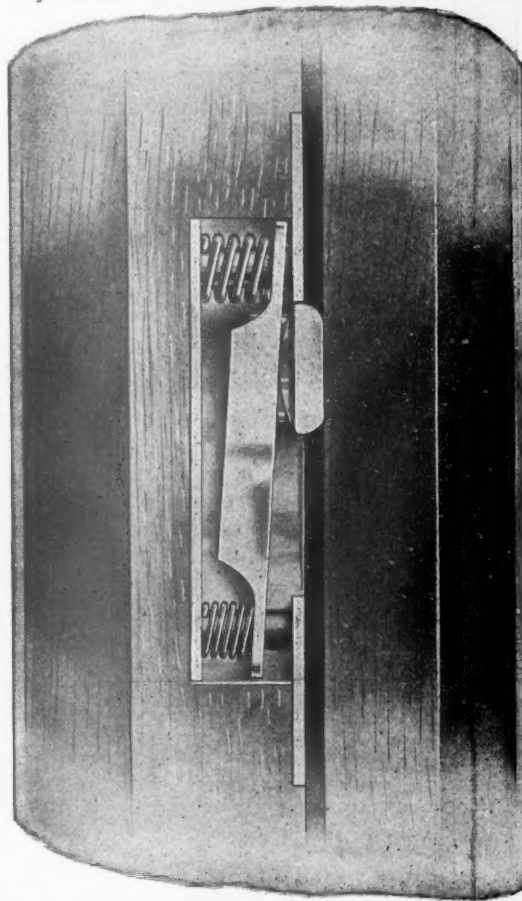
The boiler shell is constructed of open hearth sheet steel having a tensile strength of 55,000 to 65,000 lb. per sq. in. It is 14 in. in diameter and 22 in. in height with convex top and concave bottom. The seams are lap joint, and after being securely riveted, and the various pipe connections inserted, the entire boiler shell is galvanized and thoroughly tested under a pressure of 200 lb. per sq. in. The fuel tank is of sheet steel, 12 in. in diameter and 9 in. high, with seams brazed or riveted. Both the boiler and fuel tank are provided with fusible plugs having a melting point of 300 deg. F. Three Giant burners, constructed of bronze, are provided and are especially adapted for use with kerosene. A brass screen in the central supply pipe of these burners reduces carbonization to a minimum and a clean-out hole is also provided. The burner tip can be removed for cleaning. A priming pan or cup fits around the supply pipe

of each burner and is supported on an asbestos partition between the burners and the fuel tank.

The boiler, fuel tank and burners are encased in a Russia iron jacket lined with asbestos, which makes the danger of communicating the flames to surrounding objects extremely remote. This apparatus is equipped with adjustable safety valves, safety water gage, steam gage and other safety devices. The capacity is about 10 gallons and the working pressure from 15 to 50 lb. per square inch according to requirements. The device may readily be moved to any desired location without damage to the apparatus or danger to surrounding objects.

A Car Window That Will Not Drop

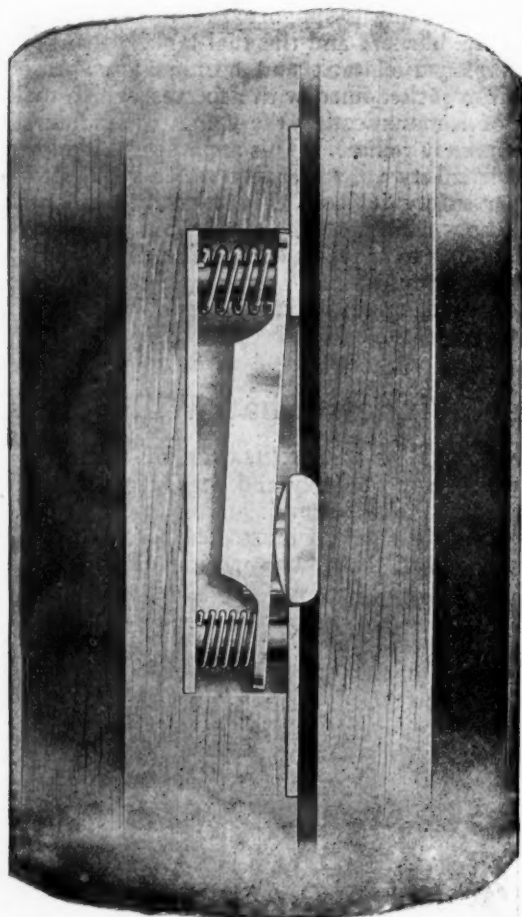
A STATEMENT OF THE NUISANCE of the car window which may suddenly and without warning drop on the hand or the arm of an unsuspecting passenger, is obtained by the device illustrated herewith, which will effectively retard the downward movement of the sash,



Shoe Automatically Slides to the Top in Lowering the Sash

thereby preventing damage to the sash frame, glass and sash lock. As indicated in the illustrations the springs are of different strengths. One photograph shows the device applied to a sash which is raised, and it will be noted that the heavy spring is at the top. In raising the sash the shoe compresses the weaker spring, allowing

the sash to be raised with comparative ease, at the same time preventing all rattle. In lowering the sash, the shoe automatically slides to the top and compresses the heavy spring, as is shown in the second illustration. This increased pressure gives sufficient friction to prevent the



Application of Compression Brake Device to Sash

sash from falling and at the same time holds the sash firmly against the outer stops when the window is closed.

If preferred, this device can be placed on the edge of the stop casing adjacent to the sash, in which case application is made with the heavy spring at the bottom. This attachment is known as the compression brake device No. A-151 and A-152, and is manufactured by the O. M. Edwards Company, Syracuse, N. Y.

New Cleaning Materials for Railways

THE WYANDOTTE METAL CLEANER is especially adapted to cleaning driving boxes and rods, brake rigging and other locomotive parts and is said to render metal surfaces chemically clean without pitting the metals or causing rust. It is further claimed that this is accomplished without creating any objectionable fumes and that by its use the amount of time devoted to cleaning is reduced to a noticeable degree. This material is manufactured by the J. B. Ford Company, Wyandotte, Mich., who have samples of it on exhibition.

For cleaning the interior of box and refrigerator cars and coaches, a material having sweetening and deodorizing as well as cleaning properties, has also been brought out by this company; the success of this material is said

to be due to the absence of soap greases, caustic and sal soda. The name of the compound is Wyandotte Sanitary Cleaner and Cleanser.

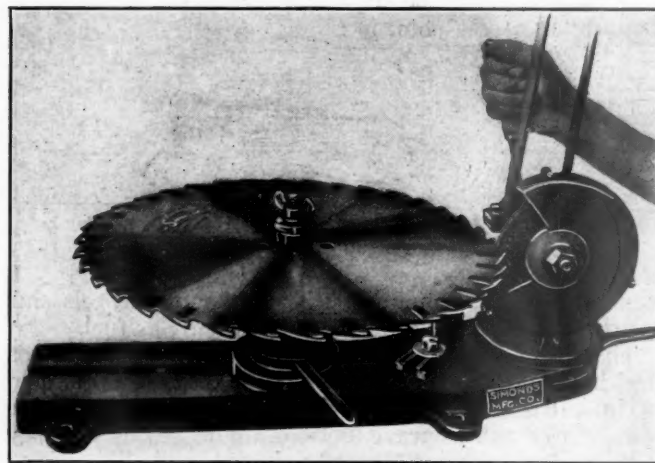
The cleaning of tile, marble, rubber and cork mats and all similar furnishings that are mopped or scrubbed, as well as floors, walls and woodwork in offices, shops, coaches and elsewhere is accomplished by a compound known as Wyandotte Detergent, another product of the above company.

Styles in Car Lighting Fixtures

SEVERAL NEW TYPES of car lighting fixtures have been put on the market by the Safety Car Heating and Lighting Company, New York. The totally indirect type has succumbed and signs seem to point to the gradual elimination or refinement of the semi-indirect type, possibly due to the cost of maintaining light colored headlinings in perfect condition for light reflection. The brilliancy of the modern gas filled electric lamp has revived the bowl type of deck fixture and has also brought into vogue the enclosing bowl type. The illumination with both of the fixtures shown in the illustrations produces a soft, restful effect, and when fitted with gas filled lamps they provide ample light for all purposes.

Inserted Tooth Metal Saw Grinder

A LIGHT, INEXPENSIVE MACHINE for quickly and accurately grinding the inserted teeth of metal saws is shown in the photograph. It is a self-contained, portable affair and may be screwed down on a bench and driven from the line shaft. The movement of the saw in the path of the grinding wheel is governed by the lever which is seen protruding from the base. Stops are provided for governing the "bite" of the wheel, and ad-



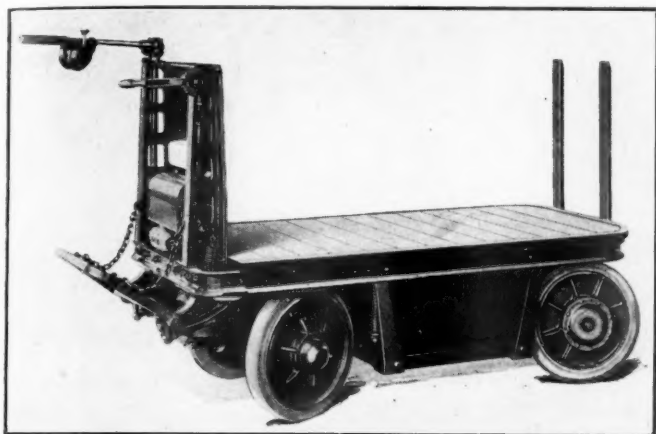
Grinder for Sharpening Inserted Teeth on Metal Saws

justment is furnished to neutralize the wear of the 5½-in. by ½-in. by ½-in. hole, 46-J vitrified Norton grinding wheel, which has a 45-deg. bevel. The teeth may be ground on the top by using a cup wheel and turning the wheel head at right angles to the position maintained in grinding the face of the teeth.

This handy little saw sharpener is at work in the booth of the Simonds Manufacturing Company, Fitchburg, Mass.

Electric Trucks and Tractors

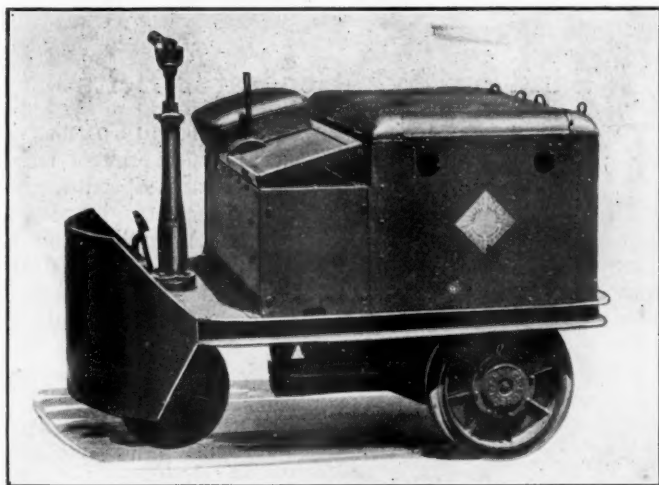
FOUR TYPES OF ELECTRIC TRUCKS and tractors have been developed and improved by the Elwell-Parker Electric Company, Cleveland, Ohio, particularly to meet the needs of the railroad field. The type EH truck is equipped with large wheels, high lift elevating platform and interlocked control mechanism. The drive wheels are $21\frac{1}{2}$ in. in diameter with $3\frac{1}{2}$ -in. treads, and the trailing wheels are 15 in. in diameter with $3\frac{1}{2}$ -in. treads. The vertical motor is direct-connected to a single reduction worm and runs in a dust tight oil case. The brake is located between the motor and differential and



Truck Designed for Operation Over Rough Pavements and Soft Yards

is operated by one of the two foot pedals. The driving axle is of the full floating type.

The lifting mechanism is operated by a separate motor especially designed for a service differing from that of the heavier propelling motor. The motor is high off the floor away from the dirt and possibility of damage. This lifting motor may be started or stopped at the will of the operator at any point in the upward or downward travel of the platform, or it may be started and left to automatically stop when the load has reached its highest or lowest position. The upward travel of the



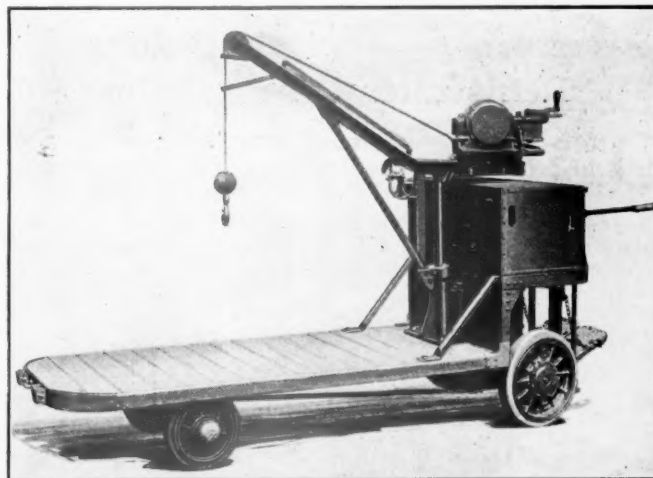
Three-Wheeled, Light Weight Tractor

platform may be set any lift up to $4\frac{1}{2}$ in., assuring clearance for the separate tray on which the load is carried.

A special device protects the elevating mechanism in case the platform should catch under some immovable

object. The platform is three-point supported. It rests on vertical links when up and is steadied by guides on each side. A heavy, hot-riveted steel frame provides support for the equipment and protects it against abuse.

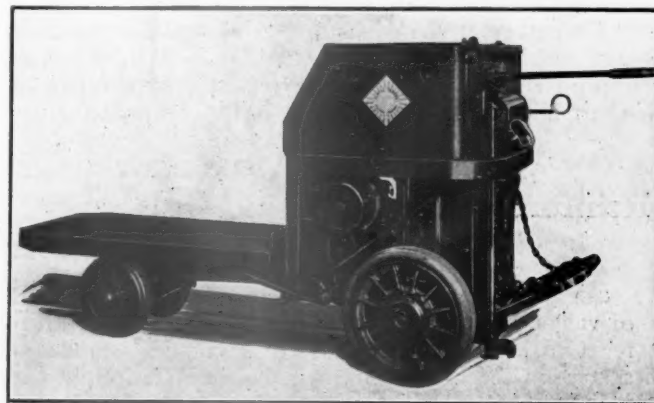
The type CC truck with a revolving crane has been designed for service where heavy castings are stored



Truck Equipped with Revolving Crane

beyond the reach of a traveling crane. The crane is electrically operated, has a capacity of 1,000 lbs. and a reach of 4 ft. It is used to load heavy pieces on the truck and transfer them to machine or forge shops for finishing. The truck has a carrying capacity of 3,500 lbs. and operates at a speed of 400 ft. per min.

The type IK truck with wheels 20 in. in diameter and battery located beneath the platform, so that all of the platform may be used for loading space, is especially designed for operation over poorly planked platforms,



Elevating Platform Truck

rough pavements or soft yards. The motor in this truck is large enough so that it cannot be injured by the battery, even though the motor is at a standstill, with the current full on. This makes fuses unnecessary and assures the climbing of inclines from yards to loading platforms. The capacity of the truck is 4,000 lb., and it operates at a speed of from 400 to 550 ft. per min.

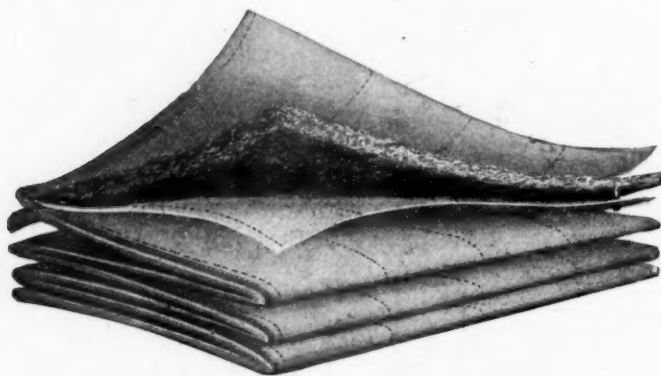
The type TA tractor is a light weight, high torque, short turning tractor for operation where machines or construction restricts operating room. This tractor has three wheels and carries a battery of 50 per cent greater capacity than a standard truck. It cannot be operated unless the driver is on the seat, which automatically closes the circuit breaker connecting the controller to the bat-

tery. There is no fuse in the motor circuit as the motor will absorb all the current the battery can deliver.

The motor is direct connected through a single reduction worm on a full floating drive axle. The wheels are 20 in. in diameter with $3\frac{1}{2}$ -in. treads, and may be fitted with chains for outside work. The operator sits on a cushioned seat and is protected by a stout dash in front. The tractor has a normal drawbar pull of 6 tons, and turns practically in its own length.

Refrigerator Car Insulation

ONE OF THE MOST VITAL FEATURES in the construction of refrigerator cars is the use of an efficient insulating material. The H. W. Johns-Manville Company, New York, is showing the Keystone hair felt insulation, which was used in the construction of the



Keystone Hair Felt Insulation

refrigerator cars built in this country and sent to France for the purpose of transporting fresh meats to the American Expeditionary Forces. This hair felt insulation consists of a cushion of specially treated hair placed between two sheets of insulating paper and securely bound together at the edges and at several intermediate points, making an insulation one-half inch thick. The results in refrigerator efficiency obtained by the use of this hair felt insulation are said to be most satisfactory.

Reinforced Flanges for Freight Car Wheels

IT IS CLAIMED that there are over 650,000 33-in. wheels of various weights with flanges thicker than the Master Car Builders' and Master Mechanics' standards in service in the United States today in both freight car and engine tender service.

The Southern Wheel Company, St. Louis, Mo., has on exhibit three pairs of wheels on axles, the wheels having flanges $\frac{3}{16}$ -in. thicker at the base line than the present Master Car Builders' and Master Mechanics' standard flange. Wheels with the flange as described above have been recommended by the Association of manufacturers of Chilled Car Wheels. One pair of the above-mentioned wheels—the 800-lb. special wheel—has just been removed from service under a 50-ton steel, hopper bottom coal car on the Atlantic Coast Line Railroad and the wheels show practically no wear on either the front or back of the flange.

The three pairs of wheels mentioned above are shown on a standard section of track with a No. 4 frog and guard rail, with standard $1\frac{3}{4}$ -in. guard rail clearance.

Improvement in Journal Packing

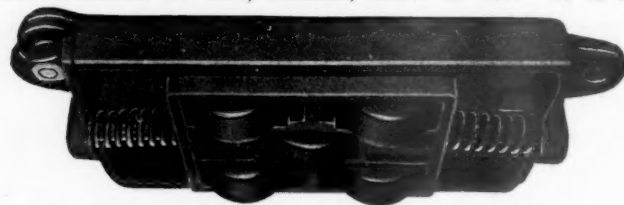
BECAUSE OF THE SCARCITY and high price of wool it has been necessary to find substitute materials for use in journal packing. The resiliency in journal packing was in the past derived almost entirely from the wool in the packing mixture, but with the great reduction in the proportion of wool waste, various fibrous and metallic substitutes have been used. The Rogers Journal Packing Company, Chicago, has improved and developed the old Rogers journal packing, under the trade names of Stecos and Fracar.

The Stecos packing for high speed service consists of 25 per cent. of wool waste with a mixture of cotton, pieces of sponge and steel shavings. The capillary action is provided chiefly by the cotton; the resiliency imparted by the wool, sponge and steel shavings makes a packing mixture that will resist the tendency to glaze over and remains in a resilient condition for a long period. The pieces of sponge, being highly absorbent, act as reservoirs of oil throughout the whole mass as it rests in the journal box.

A cheaper form of packing is the Fracar, which is composed of colored cotton waste, sponge and steel shavings, and is intended for use in freight service.

Drexel Multiple Roller Side Bearing

IN THE ILLUSTRATION BELOW is shown a roller side bearing adapted for use under extremely heavy equipment. It is of the multiple interposed roller type, which provides large contact surfaces. Being of the inverted design, it does not become inoperative through accumulations of dirt, cinders, snow or ice. It is so



Inverted Multiple Roller Side Bearing

constructed that all parts are open to close inspection. This side bearing is made by the Chicago Railway Equipment Company, Chicago.

Sand on Axle-Generator Belts

THE SAFETY CAR HEATING AND LIGHTING COMPANY, New York, has developed a device to prevent slipping of axle generator belts for trains operating in severe winter weather. This device operates by automatically depositing sand on the belt. A small motor is mounted on the frame of a small metal case located at some convenient place on the car. Geared to the armature shaft of the motor is a valve operating mechanism, whereby a valve is opened at predetermined intervals, releasing air under pressure from the air brake system. The velocity of this air passing through an injector carries a spray of sand onto the generator belt, counteracting any effects of ice on the pulleys. The sand is stored in the locker or some other suitable place and feeds through a pipe to the injector. The motor operating this device is connected directly to the lighting generator so that the sander is only in operation while the train is in motion. When the service of the sander is not required it is disconnected from the axle generator by a switch.